



Division Avenue Environmental Assessment

Division Avenue from 54th Street to 60th Street in the Cities of Kentwood and Wyoming, Kent County, Michigan

Submitted Pursuant to 42 U.S.C. 4332 (2)(c), and 23 CFR 771 By:



U.S. Department of Transportation Federal Highway Administration and



City of Kentwood, Michigan



City of Wyoming, Michigan

Abstract and Preface

Abstract

This Environmental Assessment (EA) is for the proposed reconstruction and widening of Division Avenue between 54th Street and 60th Street in the Cities of Kentwood and Wyoming, Kent County, Michigan. The Preferred Alternative would require 1.36 acres of additional right-of-way along the western boundary to allow for widening the existing four-lane facility to a five-lane cross-section; the addition of bike lanes on each side of the road; upgrading and reconstructing sidewalks on the eastern side of the corridor and the addition of a continuous five-foot-wide sidewalk on the western side of the corridor. This EA supports the determination that the Preferred Alternative has no significant environmental impacts.

Preface

The National Environmental Policy Act (NEPA) of 1969 requires that social, economic, and natural environmental impacts of any proposed action of the federal government be analyzed for decision-making and public information purposes. There are three classes of action. Class I Actions, which are those that may significantly affect the environment, require the preparation of an Environmental Impact Statement (EIS). Class II Actions (Categorical Exclusions) are those that do not require the preparation of an EIS or an Environmental Assessment (EA), because the environmental impacts are not significant. Class III Actions are those in which the significance of impacts is not clearly established. Class III Actions require the preparation of an EA to determine the significance of impacts and the appropriate environmental document to be prepared – either an EIS/Record of Decision (ROD) or a Finding of No Significant Impact (FONSI) should be documented.

This document is an EA, and will be distributed to a variety of Federal, state, and local government agencies for review and comment. It will also be available for public review, and the public may also request a Public Hearing be held. After receipt and analysis of the public comments, an assessment will be made as to whether there are significant impacts. If it is determined that the proposed project has ‘no significant impact’, the EA will be forwarded to the Federal Highway Administration (FHWA) with a recommendation that a FONSI be prepared. If it is determined that the preferred alternative may have significant impacts, preparation of an EIS will be required.

This segment of Division Avenue is under the jurisdiction of the City of Kentwood and serves as the boundary between the cities of Kentwood and Wyoming. This EA was prepared through a consultant for the cities, in cooperation with the Michigan Department of Transportation (MDOT) and the FHWA.

ENVIRONMENTAL ASSESSMENT

For the proposed widening of 0.75 miles of
Division Avenue from 54th Street to 60th Street in
the Cities of Kentwood and Wyoming, Kent County, Michigan

Prepared by the
City of Kentwood
City of Wyoming
In cooperation with the
Federal Highway Administration

APPROVED:

Date

for the Federal Highway Administration

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Planning Basis and Need for the Proposed Project

PLANNING BASIS AND NEED FOR THE PROPOSED PROJECT

Description of Study Area

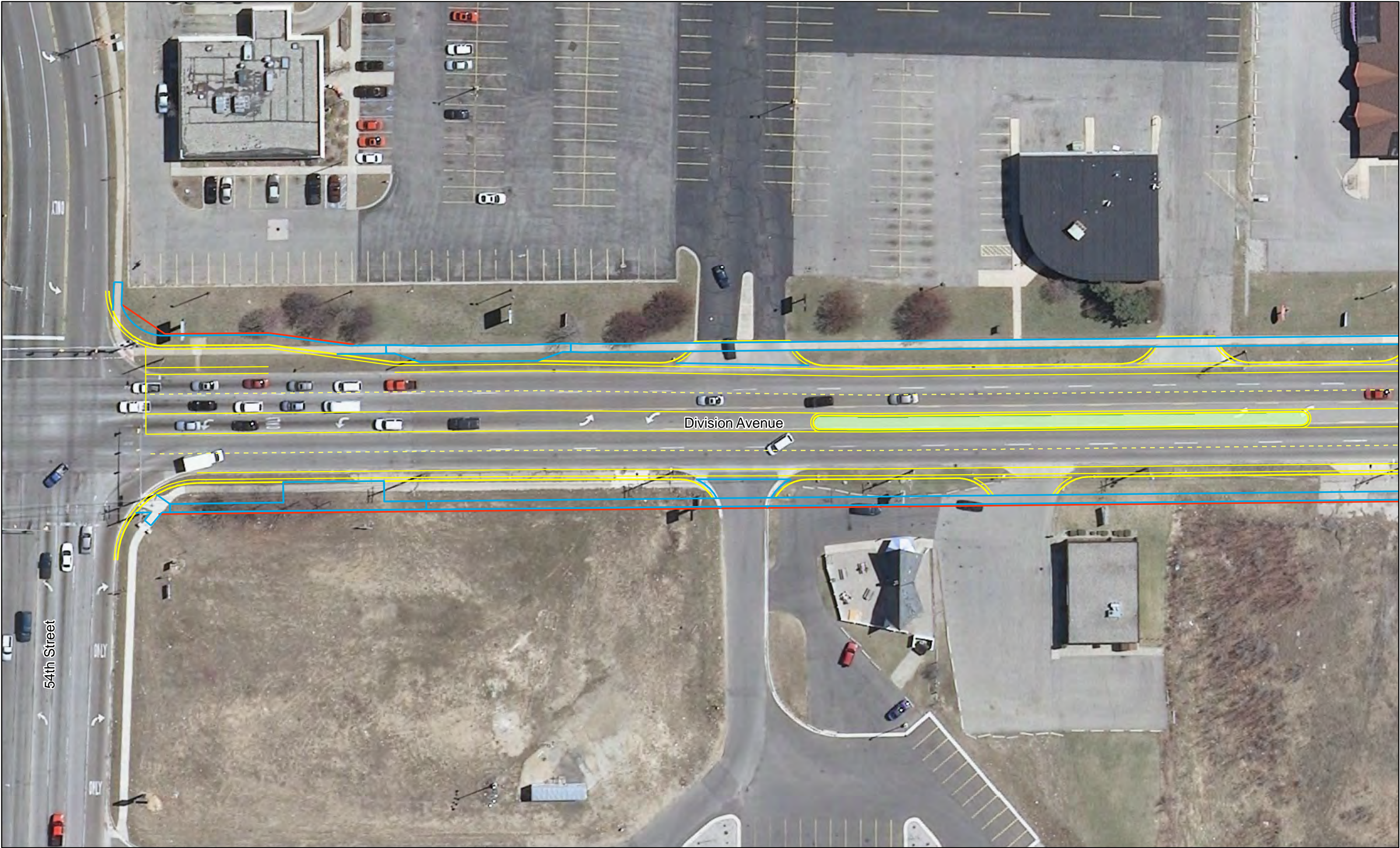
Study Area

The study area includes a .75 mile segment of Division Avenue between 54th Street and 60th Street in the Cities of Wyoming and Kentwood, Michigan (see **Figure 1** and **Figures 1a-1e**). This segment is a four-lane roadway with two traffic lanes in each direction from 60th Street to approximately 500 feet north of 56th Street. It is a Principal Arterial according to the National Functional Classification system. North of this location Division Avenue transitions to a five-lane roadway with two traffic lanes in each direction. The 60th Street to 54th Street segment of Division Avenue has pedestrian facilities (sidewalks, crosswalks, etc.) along the east side in the City of Kentwood only. Major signalized intersections are located at either end of the segment (at 54th Street and 60th Street). Minor unsignalized intersections are located at 58th Street, Nancy Street, and 56th Street.

Division Avenue serves as the north-south boundary between the cities of Kentwood and Wyoming. The adjacent land uses are almost entirely commercial, and include a number of auto-sales and recreational vehicle lots, as well as numerous vacant or underutilized sites. A limited number of residential properties front the corridor. Prior to construction of US-131 through Kent County, Division Avenue served as the commercial corridor connecting the cities of Kalamazoo and Grand Rapids.

Figure 1: Study Area





Division Avenue Environmental Assessment
DRAFT Base Map

Legend

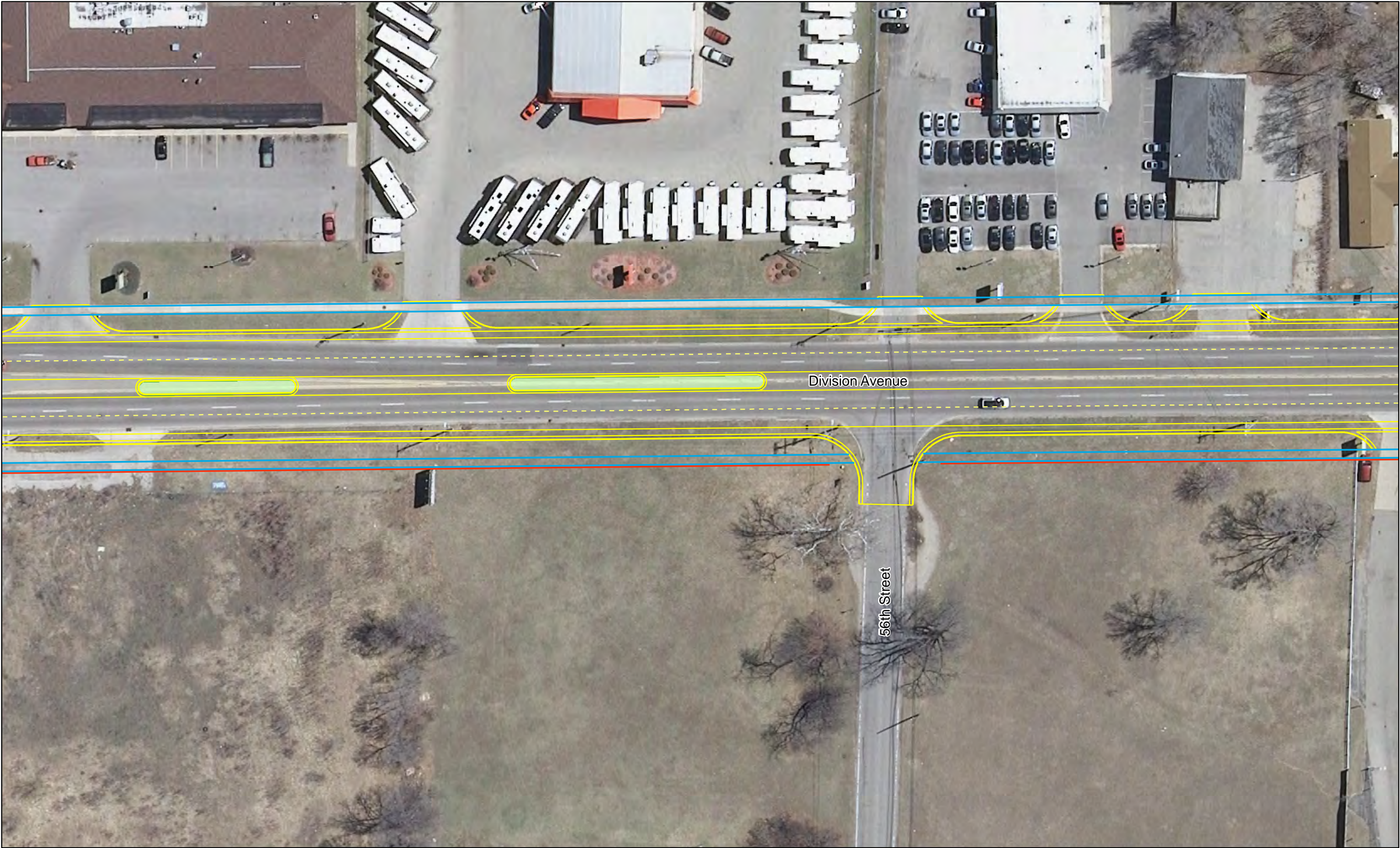
— Proposed ROW	— Proposed Roadway Location	— Proposed Sidewalks	 Median Islands
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0 25 50 100 Feet

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Figure
1a



Division Avenue Environmental Assessment
DRAFT Base Map

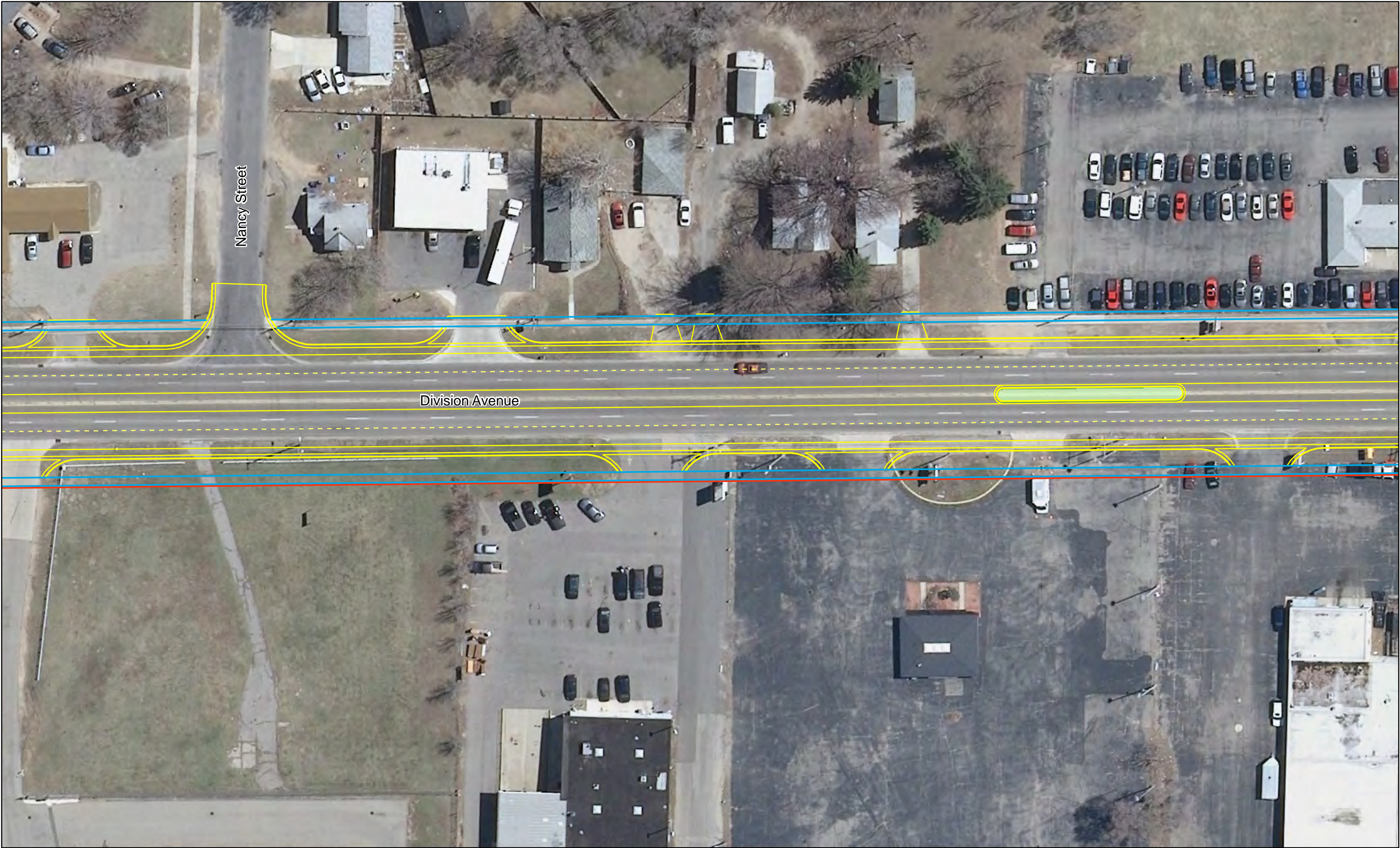
Legend

	Proposed ROW		Proposed Roadway Location		Proposed Sidewalks		Median Islands
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0 25 50 100 Feet

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Figure 1b



Nancy Street

Division Avenue

Division Avenue Environmental Assessment
DRAFT Base Map

Legend

Proposed ROW

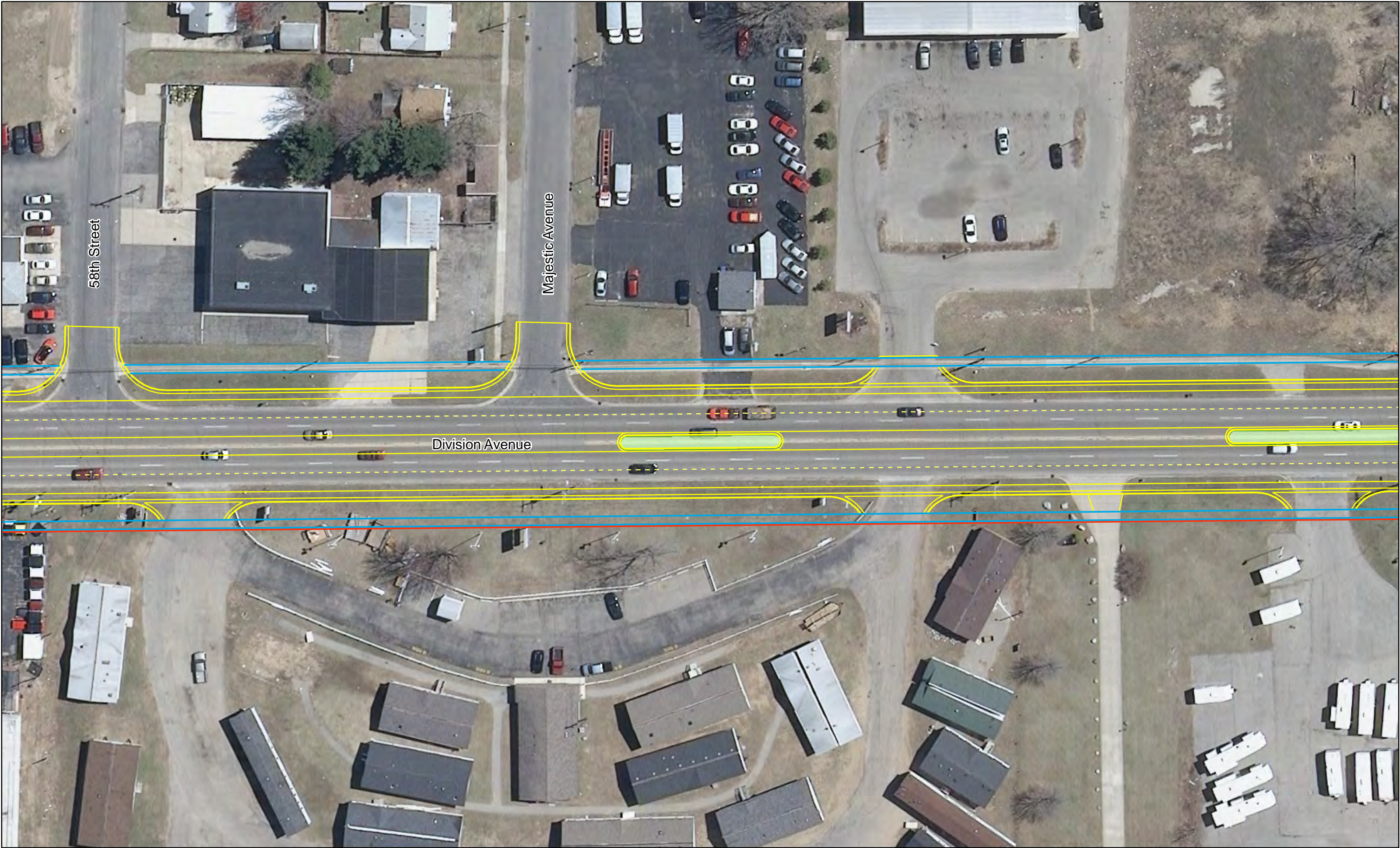
Proposed Roadway Location

Proposed Sidewalks

Median Islands

0 25 50 100 Feet

Figure
1c



Division Avenue Environmental Assessment
DRAFT Base Map

Legend

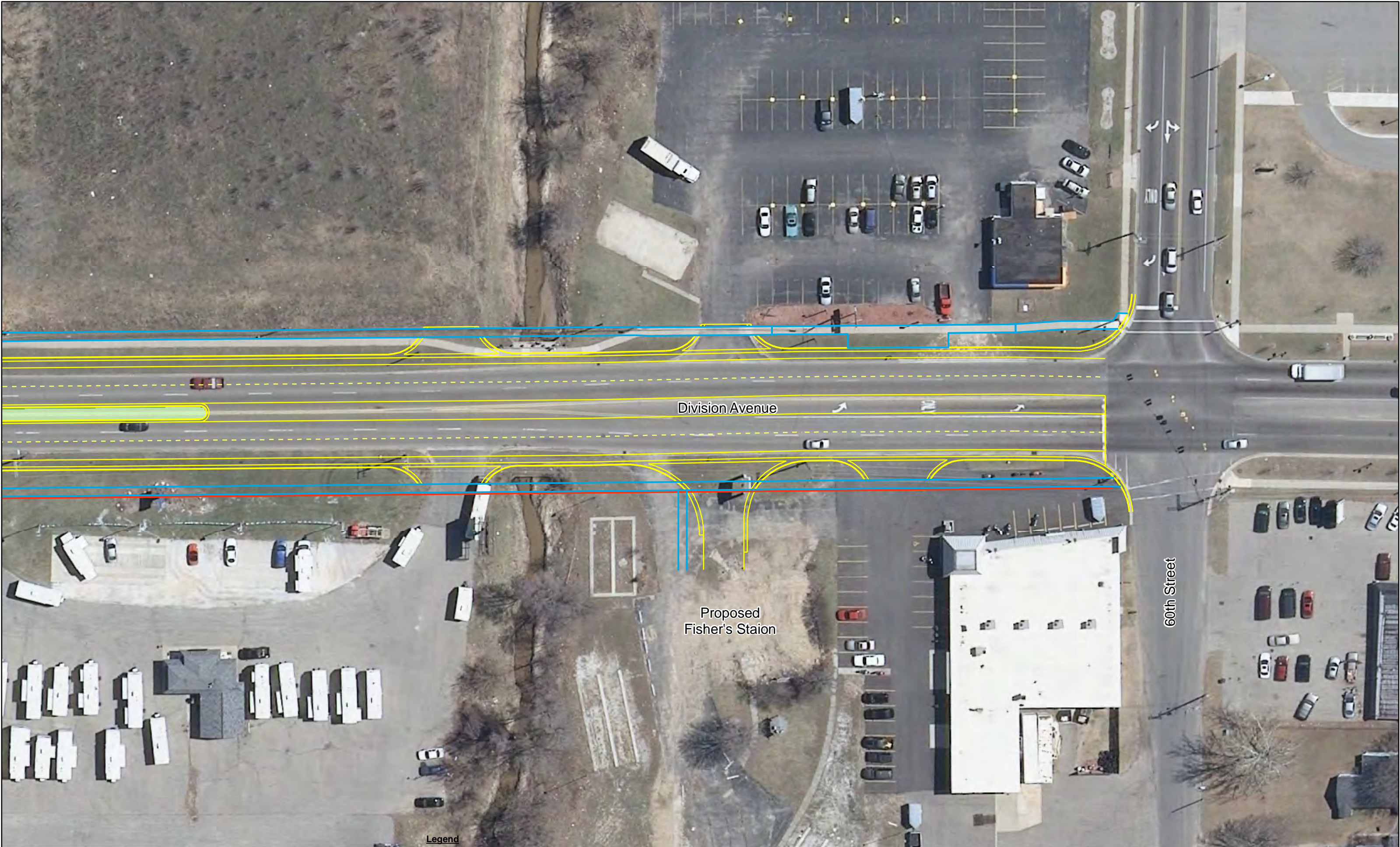
— Proposed ROW	— Proposed Roadway Location	— Proposed Sidewalks	 Median Islands
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0 25 50 100 Feet

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Figure
1d



Division Avenue Environmental Assessment
DRAFT Base Map

Legend

- Bus_Station_Sidewalks
- Proposed Roadway Location
- Proposed Sidewalks
- Median Islands
- Proposed ROW

0 25 50 100 Feet



Figure 1e

Planning Basis and Need for the Proposed Project

Description of Purpose and Need

Purpose of the Proposed Project

The *City of Wyoming 2035 Thoroughfare Plan*, prepared in 2009 for the City of Wyoming, recommended modifying the existing cross-section of Division Avenue between 54th Street and 60th Street to create five-lanes with a center turn-lane and parallel but separate non-motorized transportation facilities. This plan, combined with other local planning efforts, point to a variety of transportation and community purposes for enhancing this section of Division Avenue:

- Improved consistency of the roadway network
- Support for land use and economic re-development planning
- Compatibility with the new Bus Rapid Transit (Silver Line) service that will connect to downtown Grand Rapids along Division Avenue, terminating at 60th Street
- Improved sidewalks, crosswalks and other facilities for pedestrians and bicyclists
- Consistency with state legislation on “complete streets”
- Improved safety

Need for the Proposed Project

The need for the project includes multiple factors, each summarized below.

A More Consistent Transportation Facility

The segment between 54th and 60th Streets is the last remaining four-lane portion of Division Avenue through the cities of Wyoming and Kentwood. The roadway continues both north and south as a five-lane arterial (two travel lanes in each direction with a center turn lane). There is a need to provide continuity in the roadway design as well as provide for all modes of transportation.

Land Use Planning and Economic Redevelopment

The cities of Wyoming and Kentwood engaged in planning effort that suggested transitioning the existing land uses along Division Avenue into a mixed-use commercial area. *The Plan for Fisher’s Station*, completed in 2008, anticipated the introduction of bus rapid transit (BRT) stations at 54th and 60th Street. The study suggested that the southern terminus of the BRT route provided for the potential re-development and revitalization of the corridor. (See **Figure 2**, where Division Avenue is the main street shown running through the center of the planned area). The plan and development program for this area was recommended to replace underutilized and vacant parcels with a mixture of higher density housing and commercial development, with higher-density “nodes” located around the two transit stations and within walking distance of the expected new development.

Planning Basis and Need for the Proposed Project

Figure 2: Plan for Fisher's Station



Source: The Plan for Fisher's Station

Improved Pedestrian and Non-Motorized Facilities

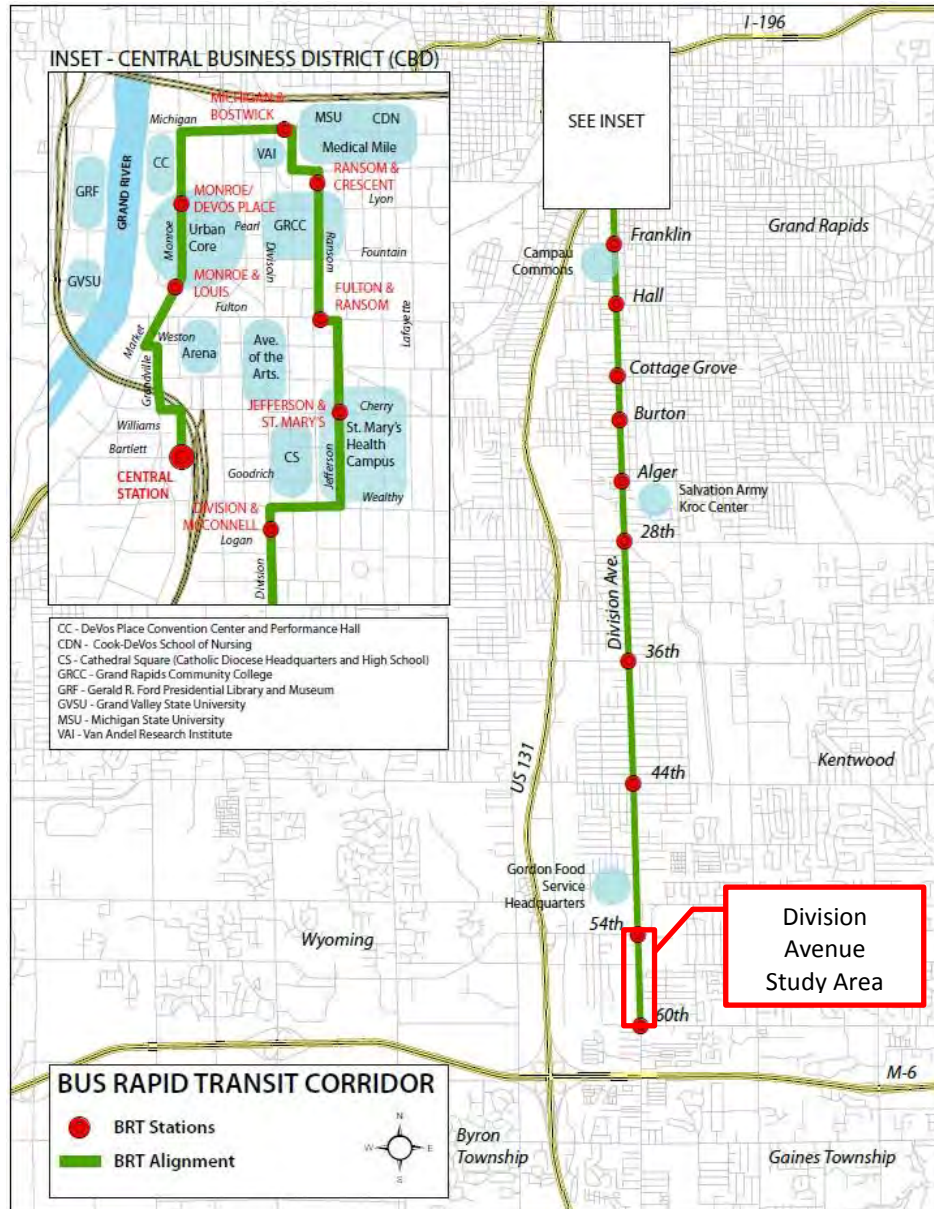
Pedestrian facilities along this segment of Division Avenue are in poor condition and fragmented. A continuous sidewalk is located along the eastern side of the road; however there is no sidewalk on the west side of Division Avenue in the City of Wyoming. Crossing signals are located at 54th and at 60th Streets; however there are no other pedestrian crossings of Division Avenue between 54th Street and 60th Streets. The corridor also lacks any bicycle facilities such as on-street lanes or off-street pathways.

Compatibility with Rapid Transit Investment

The study area is located south of downtown Grand Rapids. Division Avenue from 60th Street north into downtown Grand Rapids is the route for the Silver Line Bus Rapid Transit (BRT) (See **Figure 3**). When operational in 2014, the Silver Line will provide high capacity express transit service on Division Avenue with peak-period dedicated transit lanes from 44th Street north to Wealthy Street. However, service from 60th Street north to 44th Street will operate in mixed traffic. This new service, and its infrastructure investments, is expected to bring additional ridership and the potential for economic revitalization in the area. This three-quarter mile segment is also the last remaining segment of Division Avenue in the cities of Wyoming and Kentwood without a center turn lane or sidewalks on both sides of the road.

Planning Basis and Need for the Proposed Project

Figure 3: Silver Line BRT Project



Source: The Rapid

A More “Complete Street”

The State of Michigan enacted ‘complete streets’ legislation with Public Acts 134 and 135 in 2010, which encourages the Michigan Department of Transportation (MDOT) and local municipalities to consider the needs of all transportation modes and users when designing and constructing transportation facilities. The conditions of the segment of Division Avenue between 54th Street and 60th

Planning Basis and Need for the Proposed Project

Streets suggest that improvements to transform this corridor into a “complete street” to accommodate the transportation needs of pedestrians, bicyclists, and transit are needed.

A Safer Corridor for All Modes

Historic crash data shows that the lack of a center-turn lane combined with numerous driveways through this segment of Division Avenue may contribute to a higher-than-average number of traffic safety incidents. There is no access management plan for the corridor at this time.

Existing Conditions

Traffic data from 2012, from the Grand Valley Metropolitan Council (GVMC) Traffic Count Database System (TCDS), indicates an Average Daily Traffic (ADT) of 18,600 on this segment of Division Avenue. South of 60th Street, traffic increases to approximately 20,200 vehicles per day. North of 54th Street traffic decreases to approximately 14,600 vehicles per day. Commercial traffic volumes on Division Avenue in the study area vary between 1% and 3%. Division Avenue has a Level of Service (LOS) of “B” or better throughout the study area.

Division Avenue is an undivided roadway with the following cross-sections:

- 5-Lane Cross-section (800-foot segment): From the 54th Street/Division Street intersection south 800 feet, with a dedicated left-turn lane at the 54th Street approach.
- 4-Lane Cross-section (2,900-foot segment): From 800 feet south of 54th Street to 60th Street, widening to a 5-lane cross-section at the 60th Street/Division Avenue intersection approach for a dedicated left-turn lane.

Division Avenue has a speed limit of 45 miles per hour (mph) for the segment under study. South of 60th Street the speed limit on Division Avenue is posted at 45 mph, and north of 54th Street the speed limit is posted at 40 mph.

The study area includes a total of six (6) intersections (two signalized and four unsignalized). The signalized intersections are at 54th Street and 60th Street. The four (4) unsignalized intersections are at 56th Street, Nancy Street, 58th Street, and Majestic Street, which are 2-way STOP controlled. The four unsignalized intersections are short, minor streets serving residential areas.

Division Avenue Segment LOS – Under existing conditions, Division Avenue overall operates at LOS “A” between 60th and 56th Streets (four-lane section) and LOS “B” between 56th and 54th Streets (five-lane section). **Table 1** summarizes the segmental Levels-of-Service by direction in the study area.

Division Avenue Intersections LOS – Under existing conditions, the Division Avenue/60th Street and Division Avenue/54th Street intersections operate at acceptable LOS (“C” or better), overall and also by each approach. **Table 1** summarizes the overall and by approach intersection LOS at the study area intersections.

Planning Basis and Need for the Proposed Project

Table 1: Existing (2013) Roadway Segments and Intersections Levels-of-Service (LOS)

Road Segment			AM Peak Hour LOS			PM Peak Hour LOS				
			NB	SB		NB	SB			
Division Avenue 4-Lane Section			A	A		A	A			
Division Avenue 5-Lane Section			A	A		A	B			
Intersection	AM Peak Hour LOS					PM Peak Hour LOS				
	NB	SB	EB	WB	Over-all	NB	SB	EB	WB	Over-all
Division Avenue/60th Street	B	A	C	C	B	B	A	C	C	B
Division Avenue/54th Street	B	C	C	C	C	C	C	C	C	C

Source: URS Corporation, September 2013

Traffic Crash Analysis

Traffic crash data for the Division Avenue segments for the four-year period from January 1, 2009 to December 31, 2012 was obtained from the Traffic Crash Analysis Tool 2.0 (TCAT 2.0) database maintained by the Traffic Improvement Association (TIA).

Division Avenue Segments – A total of 73 segment crashes were reported during the four-year period on Division Avenue in the study area, of which 47% were rear-end crashes, 16% were side-swipe crashes, and 15% were angle crashes.

Crashes were further studied in two segments, by segmental cross-section:

- 5-Lane Segment: 54th Street/Division Avenue intersection south 800 feet.
- 4-Lane Segment: From 800 feet south of 54th Street to just north of 60th Street.

The four-lane segment had a crash rate that was 47% greater than the average crash rate of other urban roadways with similar ADT volumes, while the five-lane segment had a crash rate very close to the average crash rate for similar roadways (2% greater than average). A breakdown by crash type for the Division Avenue segments is depicted in **Table 2**.

Due to the high crash rate on the four-lane Division Avenue segment, further analysis was performed to identify crash clusters and patterns within the four-lane segment. The findings were as follows:

- Most crash clustering occurred at/near the four Division Avenue unsignalized intersections: Majestic Street, 58th Street, Nancy Street, and 56th Street.
- Rear-end crashes comprise 56% of the total crashes in the entire segment. Rear-end crashes are lower in the five-lane section where 11% are rear-end crashes.
- The high rate of rear-end crashes on the four-lane section of Division Avenue is partially due to the lack of a center turn lane refuge for vehicles waiting for gaps in traffic to make a left turn.
- Twelve (12) driveway-related crashes occurred along the four-lane section of Division Avenue, encompassing 19% of all four-lane section crashes.

Planning Basis and Need for the Proposed Project

Table 2: Traffic Crash History (01/01/2009 – 12/31/2012) Division Avenue

Location	Crash Type									Crash Severity	
	Total Crashes	Rear-End	Angle	Side-swipe	Head-On	Single Vehicle	Pedestrian	Bicycle	Other	Injuries	Fatalities
Division Avenue Segments											
4-Lane	64	33	7	9	3	10	1	0	1	35	0
5-Lane	9	1	4	3	0	0	0	0	1	5	0
Total	73	34	11	12	3	10	1	0	2	40	0
Percent	100%	47%	15%	16%	4%	14%	1%	0%	3%		

Source: TCAT 2.0, Traffic Improvement Association, 2009-2012

The four-lane segment exhibited a rear-end crash percentage that was approximately five times greater than the five lane section. The conversion of the four-lane section of Division Avenue to a five-lane cross section would separate left-turning traffic at intersections and commercial driveways, from through traffic reducing the potential for rear-end related crashes.

The density of driveways may also be a contributing factor in crash frequency in the study area. The driveway density along the four-lane section of Division Avenue is high, averaging about 235 feet between driveways on the east side Division Avenue and 295 feet between driveways on the west side Division Avenue. These driveway spacings are below the standard 350-foot minimum driveway spacing (for a 45 mph roadway) as stipulated in the *MDOT Access Management Guidebook, 2001*. However, there is no access management plan in place at this time.

Future (2035) No-Build Conditions

In order to estimate future (2035) traffic volumes, the existing (2013) peak-hour traffic volumes on Division Avenue were increased by an annually-compounded rate as follows:

60th Street/Division Avenue

- West of Division Avenue 0.00%
- East of Division Avenue 1.15%
- North of 60th Street 1.49%
- South of 60th Street: 1.57%

54th Street/Division Avenue

- West of Division Avenue 0.61%
- East of Division Avenue 0.32%
- North of 54th Street 1.50%
- South of 54th Street: 1.12%

The growth rates are based on the GVMC's long range transportation model and projected retail and population growth in the area. Projected ADT volumes are approximately 24,900 vehicles per day in 2035 between 54th Street and 60th Street. These volumes are consistent with projected volumes that are included in the GVMC regional transportation planning model.

Alternatives Considered

ALTERNATIVES CONSIDERED

Alternatives Considered Prior to the Environmental Assessment

In 2009, the cities of Kentwood and Wyoming, and the Township of Gaines completed The Plan for Fisher's Station. The report summarized the results of a design charrette and was written to provide guidance for land use planning once the Silver Line BRT was operational. Based on experience in other cities, such as Cleveland Ohio, BRT transit service has the potential to attract dense development patterns around the stations. The design charrette process allowed the cities of Wyoming and Kentwood to consider the future development potential of the area due to the BRT service. The plan included two new town centers developed around the Silver Line stations located within the study area.

The land use changes recommended as part of the plan were incorporated into the City of Kentwood's Master Plan. The City of Wyoming has not moved forward with the land use planning revisions, however. The City of Kentwood hopes to carry forward the land use planning efforts into future zoning changes. The illustrative cross-section for Division Avenue showing a boulevard, on-street parking, bike lanes and sidewalks was to encourage discussion about the potential development that could occur from a full build-out.

The Fisher's Station study process included several meetings to obtain public input. The Kickoff Meeting was held on September 24, 2008, and the charrette day was held on October 18, 2008. These meetings provided the public with a variety of locations to share opinions and learn about the BRT system and potential land use changes. The street type suggested as a result of the public input was an "Avenue with Median". The suggested cross-section for The Plan for Fisher's Station was described as a 112 foot right-of-way with 15 foot sidewalks, 2 eight-foot wide parking lanes, 4 eleven-foot wide through lanes and an eleven-foot wide median/turn lane. This alternative was not carried forward for future study, as it was an illustrative idea and not a design recommendation from the Cities of Kentwood and Wyoming. Further, the cross-section width and land required made the project cost prohibitive. Since the publication of the plan the Cities of Kentwood and Wyoming have worked together to develop a cross-section that meets the intent of the Plan for Fisher's Station, while remaining cost effective.

Alternatives Considered During the Environmental Assessment

No-Build

Leaving the road "as is" with only maintenance-type improvements will not address existing safety issues, provide for continuous non-motorized connections on both sides of Division Avenue and within both cities. While the No-Build Alternative requires no additional Right-of-Way (ROW) and there are no environmental impacts, leaving the road "as is" leaves an undesirable gap in the Division Avenue roadway cross section varying from five-lane to four-lane. The Silver Line BRT will run on Division along with the regular route service for Route #1 in the no-build condition.

Due to the project only being $\frac{3}{4}$ of a mile long, TSM solutions between the signalized intersections of 54th and 60th Streets are not a practical consideration or alternative.

Alternatives Considered

Division Avenue Segment LOS – Division Avenue is expected to operate at LOS “A” between 60th Street and 56th Street (four-lane section) and LOS “B” between 56th Street and 54th Street (five-lane section).

Division Avenue Intersections LOS –The Division Avenue/60th Street and Division Avenue/54th Street intersections would operate at an acceptable, overall LOS (“D” or better).

Table 3: No Build (2035) Roadway Segments and Intersections Levels-of-Service (LOS)

Road Segment			AM Peak Hour LOS			PM Peak Hour LOS						
			NB	SB		NB	SB					
Division Avenue 4-Lane Segment			A		A		B		B			
Division Avenue 5-Lane Segment			A		A		B		B			
Intersection			AM Peak Hour LOS					PM Peak Hour LOS				
			NB	SB	EB	WB	Over-all	NB	SB	EB	WB	Over-all
Division Avenue/60th Street			B	A	C	C	B	C	B	C	D	C
Division Avenue/54th Street			B	C	C	C	C	C	D	D	C	D

Source: URS Corporation, September 2013

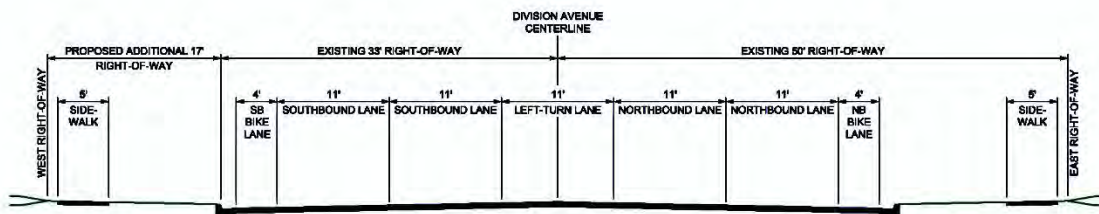
While the Division Avenue roadway segments and intersections would operate at acceptable Levels-of-Service under no-build conditions, the No-Build Alternative does not satisfy the project’s purpose and need for continuity in corridor lanes, safety and service for pedestrian and non-motorized travel.

Preferred Alternative - Five-Lanes

The Preferred Alternative includes widening and reconstructing Division Avenue from four lanes to a five-lane/boulevard cross-section, with two four-foot bike lanes on each side of the roadway, and a new, continuous sidewalk on the western side of the roadway from 60th Street north to 54th Street. (See **Figure 4** for an illustration of the cross-section). Pedestrian refuge areas and a narrow median boulevard located intermittently along the corridor provide pedestrian accessibility as well as a storage lane for left-turning vehicles. The addition of a continuous sidewalk along the west side of Division Avenue and non-motorized facilities adjacent to the travel lanes transform Division Avenue into a complete street.

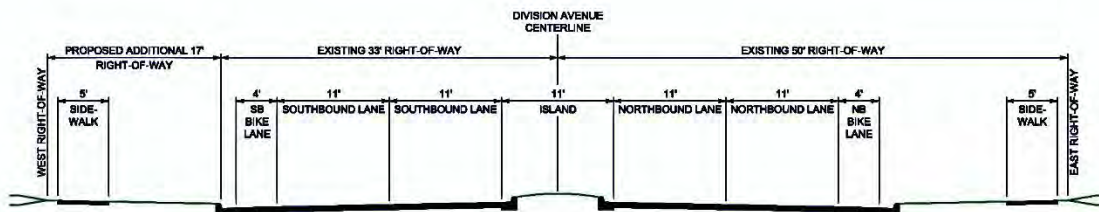
Alternatives Considered

Figure 4: Five-Lane Undivided Cross-Section and Four-Lane Cross-Section with Median Islands



FIVE LANE CROSS SECTION

FROM 60TH STREET NORTH TO 54ND STREET



FOUR LANE CROSS SECTION

AT ISLANDS

With the projected 2035 volumes of approximately 24,900 vehicles per day, and the need for pedestrian and bicycle mobility, a five-lane cross-section is recommended for the Preferred Alternative. The addition of a narrow median boulevard and left turn storage will reduce the number of rear-end crashes. Dedicated bike lanes on each side of the road and a continuous sidewalk on the western side of the road from 60th Street north to 54th Street provide full non-motorized access and linkages to transit. The Preferred Alternative meets the purpose and need better than the No-Build Alternative.

The Preferred Alternative will allow Division Avenue to operate at LOS "B" or better along the entire project length. The current signalized intersections at 60th Street and 54th Street are expected to operate at LOS "D" or better.

Alternatives Considered

Additional right-of-way (ROW) consisting of partial acquisitions of parcels will be required along the entire corridor on the west. (See the Property Acquisition and Displacements Section for more information).

The proposed improvements to Division Avenue are anticipated to improve safety conditions within the study area, including reducing left-turn related crashes (i.e. rear-end and angle crashes) by providing left-turn vehicle storage along the corridor.

Crashes could be further reduced by improved access management, via selected driveway consolidation and/or driveway closures. Driveway density is high in the study area. Driveway consolidation should be considered during the site plan review process. For vacant parcels that may eventually be re-occupied, joint access to Division Avenue with an adjacent parcel via a shared driveway (or frontage road) is an effective tool for reducing vehicular conflicts and crashes.

The Preferred Alternative for Division Avenue is included in the GVMC's 2014-1017 Transportation Improvement Program (TIP), for 2015. The TIP received final approval on November 6, 2013.

The construction cost estimate for the Preferred Alternative is as follows:

Total Project Cost Estimate..... \$2.1 Million

The cities of Wyoming and Kentwood will proceed with the purchase of right-of-way once the FONSI has been issued.

Affected Environment and Environmental Consequences

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The EA contains a comprehensive evaluation of the existing conditions, affected environment and environmental consequences of implementing the No-Build Alternative and Preferred Alternative. Issues and topics involving minimal or no impacts (such as Floodplains and Agriculture) as a result of the alternatives have been omitted unless discussion is warranted based on regulatory requirements or an issue has been specifically identified by project stakeholders or members of the public. Below **Table 4** lists the overall impacts.

Table 4: Overall Affected Environment and Social Impacts	
Impact	Preferred Alternative
Length (miles)	0.75
Wetland	0
Prime Farmland	0
Unique Farmland	0
Locally Important Farmland	0
Residential Displacements	0
Commercial Displacements	0
Vacant Land Displacements	0
Water Crossings	1
Environmental Justice	No Disproportionately High & Adverse Impacts
Noise Impacts	0
Air Quality Impacts	0
Potential Historic Architectural Impacts	None
Threatened & Endangered Species	0
Potential Contaminated Sites	1
Total Cost (\$ millions, 2014 dollars)	2.1

NEPA requires that the cumulative effects to the environment be evaluated by reviewing projects that have recently been conducted, are underway or are reasonably foreseeable in the future. The primary project that could impact resources within the study area is the Silver Line BRT, which received environmental clearance and is under construction. Land use primarily impacted. This project is consistent and complementary with the plans for the Silver Line.

Affected Environment and Environmental Consequences

Indirect and Cumulative Impacts

The improvements included in the proposed project occur on an existing project. And, while there are direct and indirect impacts due to the need to acquire right of way on the western side of Division Avenue, this is an urban corridor with existing commercial development. The project will encourage development of existing vacant commercial parcels, and with the BRT it is expected that opportunities for new commercial and residential development will occur. The City of Kentwood updated its Master Plan to encourage filling in the commercial development and higher density residential development. As compared to the No-Build Alternative the proposed project is more closely aligned with re-development opportunities and anticipated benefits from the BRT service.

Effects on Air Quality

Existing Conditions

Consistent with the CAA Section 176(c) (1) (B), this project meets all air quality conformity requirements. The metropolitan area is in attainment for all air quality standards as related to transportation conformity.

Preferred Alternative

Construction activities associated with the Preferred Alternative could cause short-term, localized impacts to air quality within the study area. An increase in vehicle emissions and dust from construction equipment will temporarily impact the study area.

Cumulative impacts to air quality are accounted for by demonstrating regional air quality conformity. This is accomplished by GVMC through the use of a computer model that incorporates all transportation projects in the approved LRP and TIP. The project has been included in these plans, and regional conformity has been demonstrated.

Effect on Threatened and Endangered Species

Existing Conditions

The potential occurrence of federally or state-listed threatened or endangered (T&E) species was evaluated based on information from U.S. Fish & Wildlife Service (USFWS), Michigan Department of Natural Resources (MDNR), and Michigan Natural Features Inventory (MNFI) websites. Federally-listed threatened and endangered species and federally-designated critical habitat receive protection under the Endangered Species Act of 1973 (ESA) (16 U.S.C. §§ 1531–1544). Federal candidate species are not specifically afforded the same protection under the ESA as threatened or endangered species; however, these rare species should be considered during a project's planning and decision making processes. State-listed threatened and endangered species are protected by laws and regulations contained in Part 365, Endangered Species Protection of the Natural Resources and Environmental Protection Act (Act 451 of the Michigan Public Acts of 1994). While special concern species are not afforded legal protection under the Act, many of these species are of concern because of declining or relict populations in the State.

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A review of the USFWS technical assistance website on August 26, 2013, for federally listed species in Kent County, Michigan produced three endangered species and one candidate species. The rare species include the snuffbox (*Epioblasma triquetra*, endangered), Karner blue butterfly (*Lycaeides melissa samuelis*, endangered), Indiana bat (*Myotis sodalis*, endangered), and eastern massasauga (*Sistrurus catenatus*, candidate). Species details are contained in **Table 5**. (Since starting this project the northern long eared bat has been added to the endangered species list.)

Table 5: Federally Listed Threatened and Endangered Species in Kent County*

Scientific Name	Common Name	Habitat	Protection Status
<i>Epioblasma triquetra</i>	Snuffbox	Small to medium-sized creeks and some larger rivers, in areas with a swift current.	Endangered
<i>Lycaeides melissa samuelis</i>	Karner Blue Butterfly	Pine barrens and oak savannas on sandy soils and containing wild lupines (<i>Lupinus perennis</i>), the only known food plant of larvae.	Endangered
<i>Myotis sodalis</i>	Indiana Bat	Summer roosts are typically behind exfoliating bark of large, often dead, trees. Winter roosts, are restricted to suitable underground hibernacula.	Endangered
<i>Sistrurus catenatus</i>	Eastern Massasauga	Various wetland habitats, including bogs, fens, peatlands, shrub carr/thickets, wet meadows, emergent marshes, moist grasslands, wet prairies, floodplain forests, and forested swamps	Candidate
** <i>Myotis septentrionalis</i>	<i>Northern Long-eared Bat</i>	Summer roosts are typically behind exfoliating bark of large (>3 inches), often dead, trees. Winter roosts, are restricted to suitable underground hibernacula.	Endangered

* List taken from USFWS website on August 26, 2013 **was added to the list in May 2014

Similarly, the MNFI database was accessed on June 12, 2014 to generate a list of legally protected species, special concern species, or other rare natural features potentially found within 2 miles of the study area (see **Appendix C** for MNFI full table). The MNFI natural heritage database is continuously updated and is a comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features.

No Build Alternative

The No Build Alternative would not result in direct impacts to any threatened or endangered species or their associated habitats.

Preferred Alternative

On August 29, 2013, a T&E species habitat assessment was performed by a qualified URS biologist for the proposed road construction project. The Preferred Alternative would impact urban land that includes developed commercial properties and disturbed old field habitat. The old field habitat present within the study area has been previously disturbed by past commercial development and current roadway activity. A majority of the old field habitat occurs on vacant lots that have been previously

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developed and once supported commercial buildings. Consequently, the old field habitat does not support any rare plant and wildlife communities and no habitat for listed T&E species is present. The vegetative community present within the study area is dominated by spotted knapweed (*Centaurea maculosa*), chicory (*Cichorium intybus*), goldenrod species (*Solidago* spp.), black locust (*Robinia pseudoacacia*), and honeysuckle (*Lonicera* sp.).

The Preferred Alternative also impacts the Crippen Drain (also known as Pine Hill Creek), which traverses the southern portion of the study area, north of 60th Street. Aquatic habitat within the Crippen Drain has been degraded by less than optimal water quality, sedimentation, erosion, and an unstable flow regime due to road runoff and commercial development. Additionally, the Crippen Drain is on the State of Michigan's Section 303(d) list as a consequence of designated use impairments. The designated use of fish consumption is not supported due to mercury and polychlorinated biphenyls (PCBs) in fish tissue and PCBs in the water column. Riparian vegetation is minimal and dominated by invasive species like reed canary grass (*Phalaris arundinacea*) and purple loosestrife (*Lythrum salicaria*), along with native vegetation like sandbar willow (*Salix exigua*), riverbank grape (*Vitis riparia*), spotted jewelweed (*Impatiens capensis*), and goldenrod species. Consequently, this county drain is characteristic of most urban waterways and does not provide appropriate habitat for listed T&E species.

After completion of the T&E species habitat assessment, it was concluded that “no species or critical habitat is present” for most of the federally-protected species due to the lack of suitable habitat. No undisturbed pine barrens or oak savannas are present to support the Karner blue butterfly and no suitable wetlands exist to provide habitat for the eastern massasauga. Additionally, the Crippen Drain lacks the swift current and suitable substrate needed to support the snuffbox. Six trees with a diameter greater than 3 inches are in the ROW. One, located in the Crippen Drain basis, would be suitable habitat for the Long Eared bat and Indiana bat. The five trees, at the northern section of the project, are not suitable potential roosting habitat due to the lack of appropriate combination of “needs” for the species.

Additionally, the T&E species habitat assessment found no species or suitable habitat for state-listed plants and wildlife. A majority of the listed wildlife are fish, mussel, or bird species associated with high quality lakes, rivers, and wetlands, which are not present in the study area. Similarly, the plant species listed mostly grow in undisturbed upland and floodplain forests, meadows, or emergent wetland communities that also do not exist in the study area.

Mitigation

All attempts will be made to minimize the disturbance to the ecosystem when designing, scheduling, and performing the proposed improvements. Given that the study area is within the region of the Long Eared bat and Indian bat activity, tree removal activities proposed as part of the construction will be restricted to the season when the bats are not active. Any tree removal activities will occur from October 1 – March 31. Tree removal plans will be included in the construction plans.

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Migratory Birds

Existing Conditions

There are no bridges along the study area. There is one culvert for the Crippen Drain which runs perpendicular to Division Avenue. No nests were observed in the culvert or in the shrubs surrounding the culvert.

No Build

The No Build Alternative would not result in direct impacts to any migratory birds or their associated habitats.

Preferred Alternative

The Preferred Alternative will not directly impact any migratory birds. There was no habitat present within the study area. If any nests are found during the construction phase, the proper agencies will be notified and all construction will stop until the necessary conditions are restored. If necessary, construction to the culvert may have to be completed between September 1st – May 15th (winter), birds are not actively nesting so no special actions are necessary.

Hazardous Waste

Existing Conditions

Federal statute 42 USC Section 9601, Sections 101, 102, 103, 105, 107, and 120 defines hazardous substances and requires Federal agencies to comply with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), defines liabilities of potentially responsible parties for contamination, limits liability under “due diligence” provisions, and establishes criteria for recovery, clean-up, and response plans. Coordination is through the U.S. Environmental Protection Agency (EPA).

A review of the Michigan Department of Environmental Quality (MDEQ) Part 201 list (MDEQ website, April 4, 2013) did not identify any sites located within a mile of the study area. A review of the National Priorities List (NPL) accessed on the United States Environmental Protection Agency (USEPA) website (April 4, 2013) indicated that there are no NPL sites located near the study area. A review of the MDEQ Part 213 Leaking Underground Storage Tank (LUST) list (MDEQ website, April 4, 2013) indicated that there are no LUST sites within the study area.

A preliminary review of Resource Conservation and Recovery Act (RCRA) sites listed on the USEPA’s Enforcement and Compliance History Online (ECHO) website (April 4, 2013) indicated that there are three sites located in the vicinity of the study area. The RCRA sites are located at 5452 S Division Avenue (O’Reilly Automotive), 5600 S Division Avenue (Serfling Printing Inc.), and 5995 S Division Avenue (J & B Motorcycles of GR Inc.). The USEPA’s ECHO website indicated that there are not any reports of violation for these three sites and as such, these sites are not expected to cause contamination to the proposed area of construction.

No Build Alternative

The No Build Alternative would not affect any contaminated sites.

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Preferred Alternative

The Preferred Alternative will impact one contaminated site along the corridor. Approximately 0.05 acres of J&B Motorcycles of GR (5995 S Division Avenue) will be impacted by the Preferred Alternative. The impacted area of the parcel is a small section of the parking lot along the road. No parking spaces will be taken. If, however, contaminated substances are encountered during construction, work at the site would cease until the contamination is assessed and a plan is put in place to prevent further migration of the contamination. Disposal of contaminated materials will be handled in accordance with applicable local, State, and Federal regulations.

Mitigation

Prior to acquisition of right-of-way for the Preferred Alternative, a Project Area Contamination Survey (PACS), or Phase I Environmental Site Assessment, will be conducted. The PACS is required before a contaminated property is partially acquired, unless previous assessments are adequate to investigate parcels of property potentially affected by the project mitigation measures. The PACS will include the review of federal and state environmental records and historical land use records, and a field site investigation. If necessary, a Preliminary Site Investigation (PSI) or Phase II Environmental Site Assessment including soil borings and the installation of monitoring wells may be undertaken to collect soil and groundwater samples to determine the type and extent of contamination that may exist.

Noise Impacts

The MDOT Highway Noise Analysis and Abatement Handbook, published July 13, 2011, provides guidance regarding highway traffic noise impact assessment for Type I and Type II highway projects according to the National Environmental Policy Act (NEPA) of 1969.

This handbook is based on FHWA's title 23 CFR, Part 772 of July 13, 2011. Assessment of highway traffic noise impacts resulting from a transportation improvement project and the determination of avoidance, minimization and/or mitigation measures must be consistent with MDOT policy, as described in the handbook.

Preferred Alternative

The Preferred Alternative includes an additional center left turn lane and no new additional through traffic lanes. It meets the definition of a Type III project under the Federal Highway Administration's (FHWA's) Procedures for Abatement of Highway Traffic Noise and Construction Noise. A Type III project is a Federal or Federal-aid highway project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis. Therefore, this project being a Type III project does not require a noise analysis.

Temporary and minor noise effects will only occur during construction. All motorized construction equipment would be required to have an approved noise reduction system to minimize any potential noise impacts.

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Wetland Impacts

Existing Conditions

As part of this EA, wetland delineation was completed using guidance manuals set forth by the Michigan Department of Environmental Quality (MDEQ) and the United States Army Corps of Engineers (USACE), which coincide with Part 303, Wetlands Protection, of Act 451 Natural Resources and Environmental Protection Act (NREPA), as amended (1994). The wetland investigation was performed on August 29, 2013 using methods and procedures detailed in the USACE *Wetlands Delineation Manual* (Environmental Laboratory, 1987), the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*, Version 2.0 (USACE, 2011), and the MDEQ *Michigan Wetland Identification Manual: A Technical Manual for Identifying Wetlands in Michigan* (2001). Any wetlands present were classified in accordance with the United States Fish and Wildlife Service (USFWS) based on Cowardin et al.'s *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979). Although procedures for making wetland determinations in the field are standardized, wetlands are often transitional areas between aquatic and upland habitats. The presence of wetlands and their boundaries within the study area may be subject to final field verification and delineation by the MDEQ.

The wetland delineation was performed along the western side of the corridor, where the additional ROW for the project will be taken. Approximately 20 feet from the curb throughout the entire 0.75-mile segment of Division Avenue from 60th Street north to 54th Street was evaluated. No regulated or unregulated wetland habitat was found within the study area.

The study area consists of urban land that includes developed commercial properties and disturbed old field habitat. The old field habitat present within the study area has been previously disturbed by past commercial development and current roadway activity. A majority of the old field habitat occurs on vacant lots that have been previously developed and once supported commercial buildings. The vegetative community present within the study area is dominated by spotted knapweed, chicory, goldenrod, black locust, and honeysuckle. Additionally, the Crippen Drain traverses the southern portion of the study area, north of 60th Street, but contains very limited riparian habitat.

No Build Alternative

The No Build Alternative would not result in negative impacts to regulated wetlands nor would it cause secondary impacts to wetlands or contribute to cumulative wetland impacts.

Preferred Alternative

Since no wetland habitat is present within the study area, the Preferred Alternative would not result in negative impacts to regulated wetlands nor would it cause secondary impacts to wetlands or contribute to cumulative wetland impacts.

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Water Quality Impacts

Existing Conditions

The project falls entirely within the Lower Grand River Watershed. The Lower Grand River Watershed encompasses approximately 1,861,468 acres (2,909 square miles) with 53% being agricultural lands. The watershed includes large portions of Ottawa, Muskegon, Kent, Montcalm, Ionia, Barry, and Eaton Counties. Counties with very small portions in the watershed include: Newaygo, Allegan, and Mecosta Counties (LGROW, 2011). The study area lies entirely within the Buck Creek Sub-basin and drains via county drains and storm sewers, into Buck Creek and eventually into the Grand River.

The Crippen Drain, also known as Pine Hill Creek, is the only body of water within the study area. It is located in the southern portion of the study area, just north of 60th Street. During field surveys in August 2013, water clarity appeared excellent and minnows were observed schooling downstream of the Division Avenue culvert. The steep slopes along the stream banks supported limited riparian vegetation, which included reed canary grass, purple loosestrife, sandbar willow, riverbank grape, spotted jewelweed, and goldenrod. Trash was present within the stream. The stream also showed signs of sedimentation issues and an unstable flow regime. **Table 6** below provides details of the county-regulated drain and **Figures 1e and 6** show the drain location.

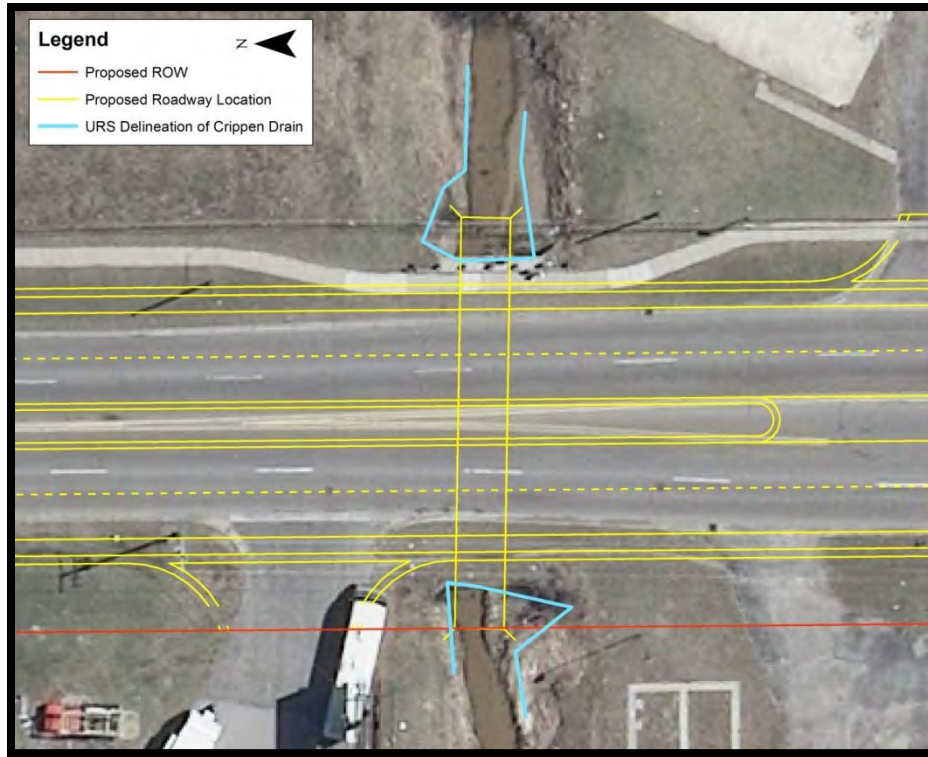
Table 6: Waterways within the Study Area

Name	Type	Width (feet)*	Bankfull Height (feet)*	Depth (inches)*	Substrate	Water Quality
Crippen Drain	County Drain	6	1	2 - 6	Sand and silt	Fair - low turbidity but has signs of sedimentation, an unstable flow regime, and trash issues

All measurements are approximations recorded on August 29, 2013

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Figure 5: Location of Crippen Drain



There is a monitoring wellhead located on the western side of Division Avenue, just south of 54th Street that belongs to a nearby Shell Oil Station, according to the City of Kentwood. Coordination of impacts to this well will occur during final design of the project.

No Build Alternative

The No Build Alternative would not result in direct impacts to the water quality of the Crippen Drain.

Preferred Alternative

The Preferred Alternative would impact the Crippen Drain, a county-regulated drain located north of 60th Street. This drain possesses characteristics of routinely disturbed, urban waterways, including the presence of trash, direct road runoff, unstable flow regimes, erosion and sedimentation problems, presence of invasive plant species, little to no riparian areas, and a lack of quality aquatic habitat.

The Preferred Alternative will add only additional 1.36 acres total of impervious area to the watershed. Therefore, a significant increase in storm water runoff is not expected as a result of the project activities and the long-term water quality of Crippen Drain should not be affected. However, the existing culverts beneath Division Avenue will most likely be extended or replaced to serve the proposed widened roadway, which could potentially lead to short-term water quality impacts due to construction activities.

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Mitigation Measures

To mitigate potential water quality impacts due to construction of the Preferred Alternative, soil erosion and sedimentation control (SESC) measures will be employed during construction activities under the applicable soil erosion and sedimentation control (SESC) and storm water permits. Potential SESC measures utilized include silt fence, erosion control blanket, turbidity curtains, dewatering bags, catch basin protection, and check dams.

Several local, state, and federal permits will be necessary to the proposed construction within the county drains and its potential impact on the water quality of these waterways. A MDEQ/USACE Joint Permit will be required due to encroach on the Crippen Drain under Part 301 (Inland Lakes and Streams) and Part 31 (Water Resources Protection) of the Natural Resources and Environmental Protection Act, Act 451 of the Public Acts of 1994 as amended. Furthermore, a Drain Permit will be necessary from the Kent County Drain Commissioner's office due to the work within the drains, drain easements, and replacing/altering culvert crossings. Also, a Soil Erosion and Sedimentation Control (SESC) Permit will be required from the Kent County Road Commission under Part 91 (Soil Erosion and Sedimentation Control) of NREPA. Additionally, Part 31 and Part 91 of NREPA may also require the issuance by the MDEQ of a National Pollutant Discharge Elimination System (NPDES) Permit, based on the size of the project.

Cultural Resources

Existing Conditions

Cultural Resources include above ground structures and archeological sites that are eligible for listing or listed on the National Register of Historic Places (NRHP). For Federally funded road projects eligibility for the NRHP is determined by FHWA in consultation with the State Historic Preservation Office (SHPO). A coordination letter was sent to SHPO, and the SHPO Section 106 application was completed and submitted for review (See **Appendix A**).

Michigan's Native American Tribes were also contacted under Section 106 of the National Historic Preservation Act. Two of the tribes responded. A letter from The Little Traverse Bay Bands of Odawa Indians stated there are no known cultural resources associated with the Little Traverse Bay Bands of Odawa Indians that are within or adjacent to the area of potential effect that will be impacted by the proposed undertaking. The Lac Vieux Desert Tribe's Historic Preservation Office also determined there are no traditional religious or cultural significance within the study area. Documentation of the contacts and responses are included in **Appendix A**.

No Build Alternative

The No Build Alternative would not affect cultural resources within the study area.

Preferred Alternative

In accordance with Section 106 of the National Historic Preservation Act, the effects of the project on cultural resources have been evaluated. The evaluation did not identify the presence of any cultural resources in the study area. Therefore the Preferred Alternative would have no effect on any properties within the study area. See **Appendix A** for the SHPO concurrence letter.

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Section 4(f) Properties

Existing Conditions

In accordance with 49 USC Section 303(c), Section 4(f), a project may require the use of publically-owned park land, recreation areas, or wildlife and waterfowl refuges, or land of historic significance only if no prudent and feasible alternative exists that would avoid using those resources, and the project includes all possible planning to minimize harm resulting from such use. An in-office review was completed, and there are no publically-owned park lands, recreation areas, or wildlife and waterfowl refuges, or land of historic sites within the study area.

No Build Alternative

The No Build Alternative would not affect any Section 4(f) properties.

Preferred Alternative

The Preferred Alternative does not pass through any Section 4(f) properties, and therefor will have no impacts to any parks, recreation areas, or wildlife and waterfowl refuges. There are a couple of parks and recreation areas located on side streets. There may be temporary impacts such as noise, dust, and road detours.

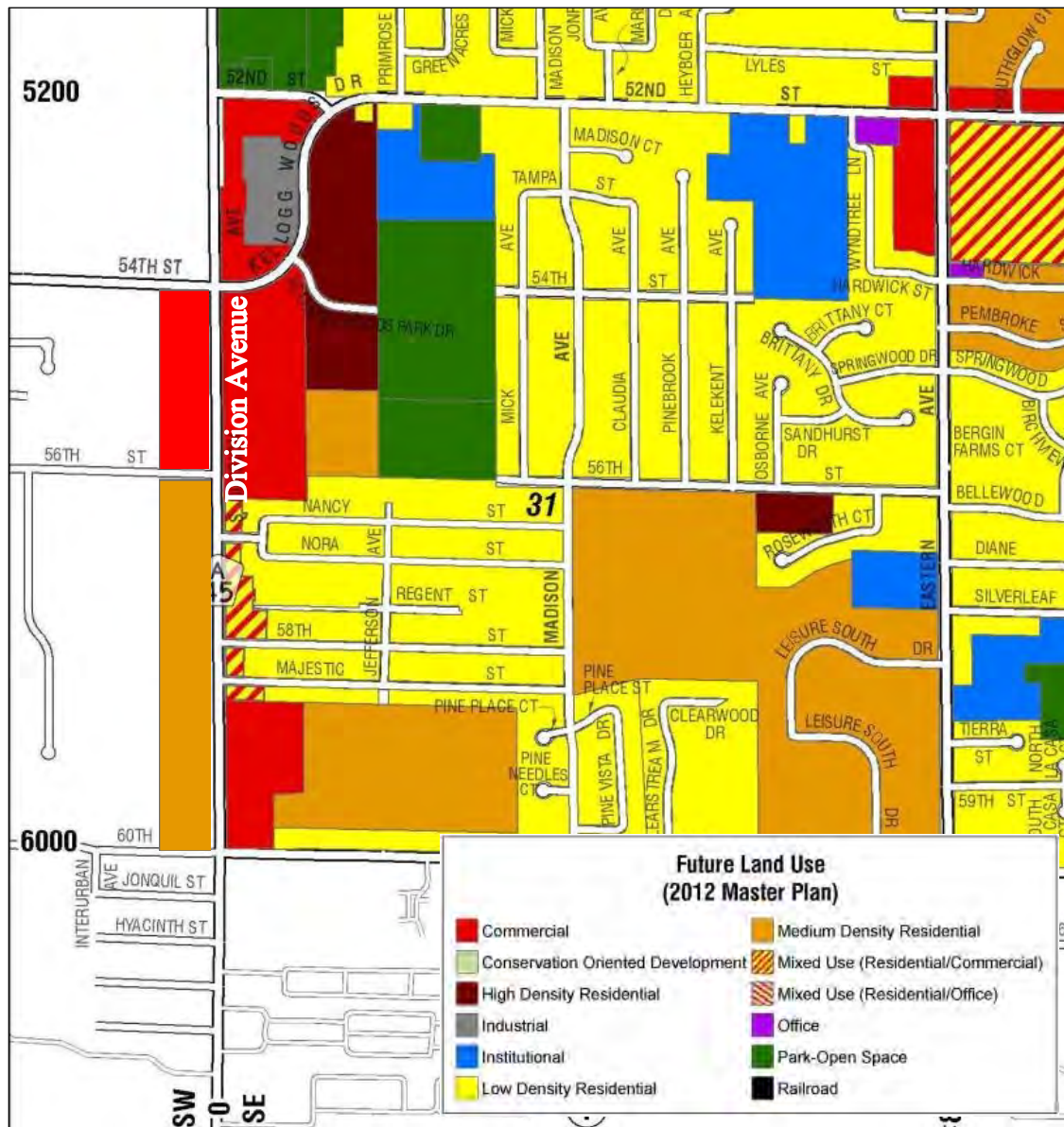
Land Use

Existing Land Use

The mixed use character of commercial and residential units along the study area corridor that includes the cities of Kentwood and Wyoming are mature suburban developments that are considered to be on the decline. Both Master Plans for the area envision higher mixed use densities within a walkable and vibrant environment to support local businesses and residents. (See Figure 6).

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Figure 6: City of Kentwood Future Land Use Map



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No Build Alternative

Under the No Build Alternative, land use will continue to remain the same consisting of an older commercial corridor supporting the local neighborhoods. The majority of commercial properties would possibly be considered undesirable with competition from other newer and prime locations providing more attractive environments for businesses. The No Build Alternative is based on an analysis of the two community Master Plans which incorporates the unique character of smaller lots, alleyways, and minimal building setbacks being emphasized to compliment future growth.

Preferred Alternative

The Preferred Alternative is expected to enhance the corridor and be consistent with local land use plans and proposed transit improvements and attract people and businesses to live and work along the corridor. It is anticipated that the Preferred Alternative would have temporary land use impacts during construction with limited access and use for some areas. However, over the long term it is expected that the multi modal improvements will offer benefits by allowing for a more walkable neighborhood and increased transit ridership.

Social Impacts

Existing Conditions

Facilities

The study area mainly consists of commercial properties. There are no community facilities such as schools, libraries, hospitals, or community centers located directly on Division Avenue within the study area. There is one high school, Crossroads Alternative High School, located in the southeast quadrant of Division Avenue and 60th Street, just outside of the study area.

Utilities

There are water, sanitary sewer, gas, telephone, and electrical transmission lines adjacent to or crossed by Division Avenue.

No Build Alternative

The No Build Alternative would not have any social impacts to the study area.

Preferred Alternative

The Preferred Alternative would not negatively affect any community services or neighborhoods.

Facilities

Within the study area there are no community facilities that would be directly impacted by the proposed footprint for Division Avenue project improvements. Crossroads Alternative High School is located at the southeast quadrant of the 60th Street and Division Avenue intersection, which is just outside the study area. The high school will not be permanently impacted by the proposed improvements. However, there will be temporary impacts during construction, such as noise, dust, and traffic detours to those who travel along Division Avenue.

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Utilities

Water, sanitary sewer, gas, telephone, and electrical transmission lines adjacent to or crossed by the project may require relocation or adjustment. If this should be the case, coordination between the cities of Kentwood and Wyoming and the affected utility company will take place during design phase. Relocation of the utility will take place prior to construction of the road, if possible. The contractor will coordinate construction activities with the affected utility companies.

Service to the study area may be temporarily interrupted during construction of the Preferred Alternative. Short (less than ½ day) electric, telephone, or cable television interruptions are possible but not expected. They will be planned as is typical with any road construction or bridge replacement. However, the effects of this work will be minimized.

Maintaining Traffic during Construction

Although there may be some temporary disruptions during construction, access for emergency vehicles will be provided for during the construction of the Preferred Alternative road improvements. Information with regard to the best route for emergency vehicles to utilize during construction activities will be coordinated by the cities of Wyoming and Kentwood.

Pedestrians, Bicyclists, and Transit

Pedestrian and Bicyclists Existing Conditions

An existing sidewalk runs along the entire east side of Division Avenue (City of Kentwood) within the study area. There is a small segment of sidewalk on the western side of the road that begins at the intersection of 54th Street and Division Avenue runs approximately 320 feet south and then stops at the first commercial driveway. The sidewalk on the western side of the corridor is not continuous throughout the study area; however, actuated push buttons and Americans with Disabilities Act (ADA) compliant sidewalk ramps are located at each signalized intersection. There are no existing bike lanes along Division Avenue.

Transit Existing Conditions

The cities of Wyoming and Kentwood are partners in the Interurban Transit Partnership (ITP) through which the cities receive transit bus service called The Rapid. Route #1 is the only Rapid bus route along Division Avenue. The southbound route has four stops along Division Avenue within the study area. The bus uses the right lane to stop to pick up pedestrians at the bus stop, and cars must drive around the bus in the left lane. The northbound route does not include stops on Division Avenue within the study area.

The Silver Line Bus Rapid Transit (BRT) project is under construction and will travel on Division Avenue from 60th Street north to downtown Grand Rapids. The BRT will provide high capacity transit service using technology and simple infrastructure for maximum efficiency and travel time savings. Two of the stations are located along Division Avenue in the study area, with one station at 54th Street and the other at 60th Street. The ITP held public meetings with residents and business owners near the BRT stations during the design process. Although the stations along the route maintain a common design, modifications based on this input were incorporated into the final design. The new BRT route will not

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eliminate any of the existing Route #1's four bus stops within the study area, and Route #1 is expected to continue to operate without substantial change once the BRT is implemented. The only minor change would be Route #1 running every 30 minutes a day instead of the existing 15 minutes a day. Construction for the BRT is expected to finish in the summer of 2014, with services scheduled to start in August 2014.

No Build Alternative

The No Build Alternative does not include construction of a continuous sidewalk on the western (Wyoming) side of Division Avenue. The Silver Line BRT and regular route service for Route 1 will continue to operate under the No Build Alternative.

Preferred Alternative

As part of the Preferred Alternative, five foot ADA compliant sidewalks will be constructed on the western side of the roadway. On each side of the roadway a four foot bike lane will be constructed. Six median islands will be constructed throughout the center turn lane. Median islands were placed where possible, with a minimum island length of 100 feet. Access to all properties for both left- and right-turn movements is maintained. In some locations, the proposed median islands prevent left-turn movements to or from existing driveways. In those locations, left-turn access is provided by another existing driveway. In the future the City of Kentwood plans to add crossing sidewalks to these islands that will help pedestrians cross Division Avenue where there are no crossing signals.

The Preferred Alternative will also compliment the Silver Line BRT by improving the pedestrian access features on both sides of Division Avenue. The Silver Line has two stations located at each end of the project. The stations, built in 2013, incorporated design elements to allow for the widening of Division Avenue. Approximately two feet can be removed from the edge of each station to accommodate for the widening of the road.

The Preferred Alternative will not cause any negative impacts on non-motorized transportation routes. Temporary impacts incurred during construction may include accessibility, dust, noise, and construction hazards.

Environmental Justice

Executive Order (EO) 12898 on Environmental Justice (EJ) requires that each federal agency address disproportionately high and adverse health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. EO 12898 was designed to supplement Title VI of the Civil Rights Act of 1964.

Existing Conditions

Population Demographics

According to the 2010 U.S. Census, the total population for the City of Wyoming is 72,125 while the total population for the City of Kentwood is 48,707. The total population for Kent County and the State of Michigan is 602,622 and 9,883,640, respectively.

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Minority Populations

According to the U.S. Census Bureau, minority populations are those groups that include Black or African Americans, American Indians or Alaskan Natives, Asians, Native Hawaiian or Other Pacific Islanders, Hispanic or Latinos, and other races. There are two census tracts located within the study area. Census Tract 143 is on the west side of the corridor and census tract 129.02 is on the eastern side of the corridor. According to the U.S. Census data, minority populations for the census tracts within study area range from 26.8 and 28.7 percent, respectively (See **Table 7**).

Low-Income Populations

“Low-Income” is defined as a household that is at or below the U.S. Department of Health and Human Services’ poverty guidelines. Based on the 2010 U.S. Census, low-income percentages for census tracts 143 and 129.02 are 11.6 and 7.4, respectively (See **Table 7**).

Table 7: Minority and Low-Income Census Information for the Study Area

Community	Population	Median Household Income	Percent Households with Limited English Proficiency	Percent of Persons in Poverty	Percent of Minority Population
Census Tract 143	2,955	\$50,017	Data not available	11.6%	26.8%
Census Tract 129.02	4,784	\$48,750	Data not available	7.4%	28.7%
City of Wyoming	72,125	\$45,246	16.6%	15.4%	31.7%
City of Kentwood	48,707	\$50,799	19.2%	13%	33.7%
Kent County	602,622	\$50,801	11.4%	14.8%	24%
State of Michigan	9,883,640	\$48,669	9%	15.7%	23.4%

Source: U.S. Census 2010 and then American Community Survey 2007-2011

As part of public outreach, the Cities of Wyoming and Kentwood jointly held a public information meeting inviting residents and local officials to learn more about the project. Seventeen people attended the meeting held on March 14, 2013. See **Appendix B** for Public Involvement. The cities of Wyoming and Kentwood did not receive any requests for translation services at the public information meeting, or brochures or other materials available in another language. If the cities of Wyoming or Kentwood receive a request for translation services during subsequent phases of this project, translation services will be available.

Considering most of the properties in study area are commercial properties, and that there are only four residential homes along the corridor, impacts, both positive and negative, would be felt by all types of populations.

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No Build Alternative

Since the No Build Alternative would not include any modifications to the existing roadway, disproportionately high and adverse effects on minority and low-income populations would not be anticipated for the No Build Alternative.

Preferred Alternative

The Environmental Justice evaluation included an assessment of the potential for low-income and minority populations to suffer disproportionate impacts compared to other groups, and consider the equitability of service benefits to these groups. The proposed widening of Division Avenue, including the construction of bike paths and additional sidewalk facilities, will not cause a disproportionately high or adverse human health or environmental effects on minority and low-income populations. An analysis of the 2010 U.S. Census Data along with field reviews of the study area determined that there are minority and low-income population groups as well as non-minority population groups who reside in the study area. Temporary effects from the preferred alternative include traffic delays, having to travel further distances, and construction noise will affect minority and low-income populations as well as non-minority population groups.

Although the Preferred Alternative will not cause any disproportionate effects on minority and low-income populations within the study area, in accordance with Executive Order 12898 and Departmental Order 5610.2(a), a continuing effort will be made to identify any additional impacts that may have a disproportionately high and adverse effect on minority and low-income population groups during subsequent phases of this project. If additional impacts are identified, every effort will be made to actively involve the impacted groups in the project development process.

Property Acquisitions and Displacements

The Preferred Alternative includes adding an eleven-foot center turn lane, two four-foot bike lanes (one on each side of the roadway), and then a continuous five-foot sidewalk on the western (Wyoming) side of the roadway.

No Build

The No Build Alternative would not impact any properties along the corridor.

Preferred Alternative

The widening and reconstruction of Division Avenue adding a center turn lane, bike lanes, and a sidewalk on the western side of the corridor, will require partial acquisition to all properties along the western side of the roadway (the average depth of the partial acquisition is 17 feet). There are no displacements or full acquisitions of public buildings, homes or churches with the Preferred Alternative. Besides the partial property acquisitions, there are approximately 15 business signs on the western side of the road that would be impacted. A business sign inside the proposed ROW would be considered personal property and the property owner would be reimbursed to move it outside the ROW.

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Visual Impacts

Existing Conditions

The existing visual assessment along the Division Avenue project corridor is typical for a commercial area in West Michigan. The study area includes a couple of strip malls with a mix of retail businesses, some stand-alone commercial facilities (some vacant). There are also a few residential homes. All are typical characteristics of a commercial corridor. There are no unique or visual features along the corridor.

No Build Alternative

The No Build Alternative would not impact the visual conditions of the study area.

Preferred Alternative

The Preferred Alternative provides greater opportunity for revitalization of the corridor with an overall mixed-use development for greater connectivity and activity for a more vibrant environment. Incorporating elements such as non-motorized pathway connections for neighborhoods along with landscaping features that will soften the appearance of pavement will create a more attractive corridor. Suggestions from previous studies and plans to enhance the corridor include: higher development densities, updated architectural standards, curbs and gutters, street lighting, street trees, street furniture, and way finding signage.

Public Involvement and Agency Coordination

PUBLIC INVOLVEMENT AND AGENCY COORDINATION

Throughout the development of this project, coordination and consultation were conducted with members of the public and government agencies. This chapter describes the coordination and consultation that was conducted. Additionally, this chapter also describes the decision that will need to be made by FHWA regarding this project.

Public Involvement

Public involvement activities and opportunities occurred throughout the planning process, beginning with the identification of the need for the project in the GVMC's 2035 Long Range Transportation Plan (LRTP) for FY 2014. The project is also included in GVMC's 2014-2017 Transportation Improvement Program (FY 2014), approved by the GVMC, and is expected to receive final approval from the Federal Highway Administration (FHWA) after October 1, 2013. Both the LRTP and the TIP follow the GVMC's Public Involvement Plan Process, which involves the public at an early stage in the planning process and allows the public several opportunities to comment on the plans, including formal public meeting.

A public meeting was held as part of the Division Avenue EA planning process on March 14, 2013, to introduce the public to the project and provide an additional opportunity to review the alternatives under consideration for Division Avenue from 54th Street to 60th Street. Residents along the corridor were notified by letter about the upcoming public meeting. Owner names and addresses were obtained from GVMC's Regional Geographic Information System (REGIS) to create the mailing list. A record of the meeting attendance and comments is included in **Appendix B**.

Agency coordination

Coordination letters, which included a map of the project area, were mailed to the potentially interested agencies in August 2013. The letter informed the agencies about the project and requested any reasonable foreseeable issues or impediments with the proposed project. Response letters from the agencies are included in **Appendix A**. The following is a list of agencies the coordination letter was mailed to:

- State Historic Preservation Office (SHPO)
- Michigan Department of Environmental Quality (MDEQ)
- Michigan Department of Natural Resources (MDNR)
- U.S. Fish and Wildlife Service (USFWS)
- Kent County Drain Commissioner
- Kent County Road Commission
- The Rapid

The following Native American Tribes were sent a coordination letter:

- Bay Mills Indian Community
- Grand River Bands of Ottawa Indians
- Grand Traverse Band of Ottawa and Chippewa Indians
- Hannahville Potawatomi Indian Community
- Huron Potawatomi-Nottawaseppi Huron Band of Potawatomi Indians
- Keweenaw Bay Indian Community

Public Involvement and Agency Coordination

- Lac Vieux Desert Band of Lake Superior Chippewa Indians
- Little River Band of Ottawa Indians
- Little Traverse Bay Band of Odawa Indians
- Match-E-Be-Nash-She-Wish Band of Potawatomi Indians
- Pokagon Band of Potawatomi Indians
- Saginaw Chippewa Indian Tribe
- Sault Ste. Marie Tribe of Chippewa Indians

EA Review

After the FHWA approves the EA for public and agency review, the cities of Wyoming and Kentwood will place a public notice in the local newspaper to notify the public that copies of the EA are available for review at easily accessible and public locations. Possible locations include the Kent District Libraries at Wyoming, Kentwood, and Gaines Township, the City of Wyoming City Hall, and the City of Kentwood City Hall. The public will have the opportunity to comment on the EA for 30 days. If there is a request for a public hearing during the comment period, a public hearing will be scheduled and held. It will also be available for public review, and the public may also request a Public Hearing be held. After receipt and analysis of the public comments, an assessment will be made as to whether there are significant impacts. If it is determined that the proposed project has 'no significant impact', the EA will be forwarded to the Federal Highway Administration (FHWA) with a recommendation that a FONSI be prepared. If it is determined that the preferred alternative may have significant impacts, preparation of an EIS will be required.

The EA will be made available for public review online in PDF format at <http://www.ci.kentwood.mi.us/> and <http://www.ci.wyoming.mi.us/>. Additionally, the agencies, organizations, and persons listed above received a notice of availability and/or copies of the EA.

APPENDIX A

COORDINATION LETTERS

August 7, 2013



Project ID: Division Avenue Project

Booshoo,

The Lac Vieux Desert Tribal Historic Preservation Office received your request for information related to properties of traditional religious and cultural significance within the vicinity of the proposed facility and any comments or concerns for affects to those properties as according to your obligations under Section 106 of the National Historic Preservation Act and the Native American Graves Protection Act.

The Ketegitigaaning Ojibwe Nation Tribal Historic Preservation Office does not release information related to properties of traditional religious and cultural significance to anyone. However, through government-to-government consultation, the LVD THPO will review project documents to determine whether or not any of these sites exist within the Area of Potential Effects and if so what those effects may be. If we have identified any sites of concern in our research of the project area, we will notify you of the fact.

Please forward the following information: a short summary of the proposed ground disturbing activity, Legal Description of the Area of Potential Effects, Topo maps identifying the proposed area, and copies of any studies that have already been conducted regarding cultural resources and archaeology in their full format, including reports on archaeological and cultural sites identified.

Effective: January 1, 2013:

To enable us to participate fully, the Ketegitigaaning Ojibwe Nations fee for such services is \$100. \$50.00 for historical/cultural records research and \$50.00 for archaeological records review per section of land. The fee must be submitted so that the research can be done. At that time we will review and make our determinations with the appropriate information that we have on file with our Tribe pertaining to this area.

All Collocation Projects will be handled in the same manner as new projects UNLESS the Ketegitigaaning Ojibwe Nation commented on the original project.

Should you have any questions, please feel free to contact me at 906-358-0137.

Miigwetch,

giiwagiizhigookway Martin, THPO

Fee can be sent along with the requested information to:

Make Check Payable to:

Ketegitigaaning Ojibwe Nation THPO

P.O. 249

Watersmeet, Michigan 49969

Office: 906-358-0137

Fax: 906-358-4850

Email: gmartin@lvdtribal.com

URS Corp. Date Received	
AUG 12 2013	
Project No.	
Filing Code	

September 16, 2013

Mr. Giiwegiizhigookway Martin
Lac Vieux Desert Band of Lake Superior Chippewa Indians
P.O. Box 249
Watersmeet, MI 49969

**Re: Division Avenue Environmental Assessment
T06N, R11W, Section 31
T06N, R12W, Section 36
Cities of Kentwood and Wyoming, Kent County, Michigan**

Dear Mr. Martin:

In response to your letter, URS would like to proceed with requesting information related to properties of traditional religious and cultural significance within the proposed Division Avenue study area. The following is enclosed to complete the Section 106 of the National Historic Preservation Act and the Native American Graves Protection Act:

- Topographic map identifying the proposed study area,
- SHPO Application with detailed information of the legal description of the Area of Potential Effects (APE),
- Check for \$200.

This project consists of the reconstruction and widening of Division Avenue from 54th Street to 60th Street in the Cities of Kentwood and Wyoming, Kent County, Michigan. Widening of the road requires 1.36 acres of additional right-of-way. The project includes widening the existing four-lane facility to a five-lane cross-section, with the addition of four-foot bike lanes on each side of the road, and a five-foot sidewalk on the western side of the corridor.

Should you have any questions or if you need additional information, please contact Jason Bibby, Environmental Planner, at 248-204-4192.

Sincerely,

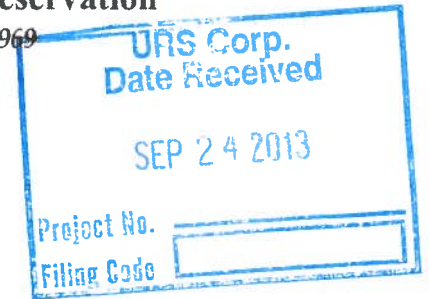
URS Corporation

Jason Bibby, AICP
Environmental Planner

LAC VIEUX DESERT BAND OF LAKE SUPERIOR CHIPPEWA INDIANS

Ketegitigaaning Ojibwe Nation Tribal Historic Preservation

P.O. Box 249, E23857 Poplar Circle Watersmeet, MI 49969
Phone: 906-358-0137 or 0138 Fax: 906-358-4850



Date: September 19, 2013

Project #: Reconstruction and widening of Division Avenue from 54th St. to 60th Street in Cities of Kentwood and Wyoming in Kent County, MI.

Booshoo,

The Ketegitigaaning Ojibwe Nation THPO (Lac Vieux Desert Chippewa/LVD) received your requests for comments or interest concerning the National Historic Preservation Act, Section 106 request for review and comment to the effect on historic and cultural sites within the proposed above referenced project area.

Ketegitigaaning Ojibwe Nation does not release any cultural/historical data to any agency outside of the Nation. We will however research and check our databases, maps, and any other pertinent inventory records with regards to said project.

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the Ketegitigaaning Ojibwe Nation Tribal Historic Preservation Officer (THPO) that the project will have **no adverse effect** [36 CFR § 800.5(b)] on historic properties within the area of potential effects for the above-cited undertaking.

This letter evidences the FCC's compliance with 36 CFR § 800.4 "Identification of historic properties" and 36 CFR § 800.5 "Assessment of adverse effects", and the fulfillment of the FCC's responsibility to notify the THPO, as a consulting party in the Section 106 process, under 36 CFR § 800.5(c) "Consulting party review".

Referencing above mentioned project we have determined that we have no objections to the project at this time we have now completed the necessary paper work and research for site documentation and will keep the project open until such time it ends. If the scope of work changes in any way, or if artifacts or human remains are discovered please notify LVD immediately.

Please forward any future request for review of historic and cultural properties according to the National Historic Preservation Act Section 106 to giiwégiizhigookway Martin, Tribal Historic Preservation Program Officer at the address below.

Miigwetch,

giiwégiizhigookway Martin, THPO
Ketegitigaaning Ojibwe Nation
Tribal Historic Preservation Office
P.O. 249
E23857 Poplar Circle
Watersmeet, Michigan 49969
Phone: 906-358-0137
Fax: 906-358-4850

Email: gmartin@lvdtribal.com

Name: URS
Amount Paid: \$200.00
Project#: Kentwood & Wyoming/Kent Cty
CK #: 00342507
Invoice: 3490
Date Closed: 9/19/2013
Initials: gm



Jason Bibby <bibbyjason@gmail.com>

FW: Division Avenue Environmental Assessment

1 message

Bibby, Jason <jason.bibby@urs.com>
To: "Bibbyjason@gmail.com" <Bibbyjason@gmail.com>

Thu, Aug 15, 2013 at 8:33 AM

From: Wesley Andrews [manidok@hotmail.com]
Sent: Thursday, August 15, 2013 7:35 AM
To: Bibby, Jason
Cc: Eric Hemenway
Subject: Division Avenue Environmental Assessment

Dear Mr. Bibby,

Your letter to Chairman McNamara, dated 6 August 2013, regarding the above referenced project was forwarded to me for response.

Please be informed that there are no known cultural resources associated with the Little Traverse Bay Bands of Odawa Indians that are within or adjacent to the area of potential effect that will be impacted by the proposed undertaking.

However, should any Native American human remains and/or cultural items become discovered we expect to be notified immediately.

Sincerely,

Wesley L. Andrews
Tribal Historic Preservation Officer &
Native American Graves Protection Repatriation Act Representative
The Little Traverse Bay Bands of Odawa Indians

[\(231\) 670-0713](tel:(231)670-0713)

This e-mail and any attachments contain URS Corporation confidential information that may be proprietary or privileged. If you receive this message in error or are not the intended recipient, you should not retain, distribute, disclose or use any of this information and you should destroy the e-mail and any attachments or copies.



RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
MICHIGAN STATE HOUSING DEVELOPMENT AUTHORITY
STATE HISTORIC PRESERVATION OFFICE

SCOTT WOOSLEY
EXECUTIVE DIRECTOR

August 30, 2013

DAVE WILLIAMS
FEDERAL HIGHWAY ADMINISTRATION
315 W ALLEGAN STREET
LANSING MI 48933

RE: ER05-614 Division Avenue from 54th Street to 60th Street, Sec. 31, T6N, R11W, Sec. 36,
T6N, R12W City of Kent and City of Wyoming, Kent County (FHWA)

Dear Mr. Williams:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that **no historic properties are affected** within the area of potential effects of this undertaking.

This letter evidences the FHWA's compliance with 36 CFR § 800.4 "Identification of historic properties," and the fulfillment of the FHWA's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected." **If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.**

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking.

If you have any questions, please contact Brian Grennell, Cultural Resource Management Specialist, at (517) 335-2721 or by email at GrennellB@michigan.gov. **Please reference our project number in all communication with this office regarding this undertaking.** Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

Brian G. Grennell
Cultural Resource Management Specialist

for Brian D. Conway
State Historic Preservation Officer

SAT:BGG:sb

Copy: Mrs. Theresa Petko, URS Corporation

Kozlowicz, Stephanie

From: Latvaitis, Angie <angie.lataitis@kentcountymi.gov>
Sent: Monday, June 09, 2014 9:01 AM
To: Kozlowicz, Stephanie
Cc: Byl, William
Subject: FW: Division Avenue Environmental Assessment
Attachments: WB Drain Commissioner w_signature.pdf; Basemaps 1a-1e.pdf

Stephanie,

According to the base map, the road work will impact the Crippen Drain road culvert just north of 60th Street. Any information in regards to the culvert extension shall be forwarded to our office for further review on its impacts hydraulically on the Crippen Drain.

Sincerely,

Angie Latvaitis

Staff Engineer

Office of the Kent County Drain Commissioner, William Byl

336-3688

From: Byl, William
Sent: Monday, June 02, 2014 1:50 PM
To: Latvaitis, Angie
Subject: FW: Division Avenue Environmental Assessment

Would you pls look into this?

From: Kozlowicz, Stephanie [<mailto:stephanie.kozlowicz@urs.com>]
Sent: Monday, June 02, 2014 1:30 PM
To: Byl, William
Subject: Division Avenue Environmental Assessment

Hello Bill-

Almost a year ago URS sent you a letter informing you about an Environmental Assessment (EA) we were writing for the Cities of Kentwood and Wyoming. The EA is for the road widening of Division Avenue from 54th Street south to 60th Street. We recently received comments back from the Federal Highway Administration (FHWA), and they noted that we sent you a letter, but never received a response. They would like for us to close the loop so there are not any surprises later on when permits need to be issued. If you could please review the letter again and please reply with any reasonably foreseeable issues or impediments with the proposed project it would greatly be appreciated. Please let me know if you have any questions.

Stephanie Kozlowicz

Transportation Planner/GIS Specialist

APPENDIX B

PUBLIC INVOLVEMENT

Division Avenue Environmental Assessment
March 14, 2013 PUBLIC MEETING ATTENDANCE RECORD

Name	Address/Company	Phone	Email
Scott Myhre	Leading Edge Realty 5630 S. Division Ave	616-560-8095	scott@leadingedge.mn.com
Kent Tebbey	5610 S. D. Village	616 813-9052	tebbey@msd.com
Russ Henschel	20600 Burkington Ave Wendy City of Kentwood	616 530-7254	henschel@kentwood.mn.us
Mike Naber	5590 S Division	616-534-9641	mike@midwayrv.com
Terry Schweitzer	City of Kentwood	616 554-0710	schweitzer@ci.kentwood.mn.us
DOUG STASSEN	5831 S. Division	(616) 538-6693	
James Fasten	70 - 56 th St.	616 827-9382	
DAVID HADDA	1/2 Pr. Bill Hinzenga	616-570-0017	haddad@madisonhouse.gov
Garrett Kaiser	5815 So. Div	616 583 0217	
Scott Baldwin	5701 S. Division	616 531-4591	sbaldwin@habitatkent.org
THEODORA PETKO	URS		
Jon Bibb	URS		
Stephanie Kayberg	URS		

50

[illegible]

March 14, 2013 Public Meeting Comment Card

Did tonight's meeting provide you with useful information about the various elements of The Study?

☒ Yes ☐ No

Do you feel that you were given an opportunity to share your thoughts, concerns, ideas and recommendations at tonight's meeting?

☒ Yes ☐ No

Please share any additional information, ideas, insights or feedback to help us with our work.

I THINK THE GRASS AREAS IN THE LEFT TURN AREA IS BAD FOR TRAFFIC.

Would you like to continue receiving information about the project?

☒ Yes ☐ No

Please include your preferred contact information below:

Name:

DOUG STASSEN

Address:

5831 SOUTH DIVISION AVE.

Phone:

(616) 538-6693 (616) 450-2918

Email:

March 14, 2013 Public Meeting Comment Card

Did tonight's meeting provide you with useful information about the various elements of The Study?

☐ Yes ☐ No

Do you feel that you were given an opportunity to share your thoughts, concerns, ideas and recommendations at tonight's meeting?

☐ Yes ☐ No

Please share any additional information, ideas, insights or feedback to help us with our work.

Send draft base map

Would you like to continue receiving information about the project?

☐ Yes ☐ No

Please include your preferred contact information below:

Name:

Larry Kaiser

Address:

3091 Rust Creek Dr SW

Phone:

Byron Center, MI 49315

Email:

~~561-1500~~

Record of Telephone Conversation

Date: March 3, 2013 **Time:** 10:15 am **Project #:** 12943931

Recorded by: Jay Bibby **Owner / Client:** City of Wyoming

Talked With: Curt Parker **of** 6025 S. Division

Type of Call: x **Incoming** **Outgoing** **Phone #:** _____

Main Subject of Call: Public Meeting for Division Avenue Environmental Assessment

Items Discussed:

I spoke with Curt Parker who owns a commercial building along the study corridor at 6025 S. Division. Curt called to state he could not attend but wanted an information packet sent to his email at parkconinc@yahoo.com Items he was concerned with included:

1.Realizing his building frontage setback might be impacted, wanted information on the alignment.

I notified Curt that we would keep him in the loop via his preferred contact of email and keep him updated on the preferred alternative and what that design will entail with regards to his comment.

Record of Telephone Conversation

Date: March 22, 2013 **Time:** 4:15 pm **Project #:** 12943931

Recorded by: Jay Bibby **Owner / Client:** City of Wyoming

Talked With: Blane Kemp **of** 5995 S. Division

Type of Call: x **Incoming** **Outgoing** **Phone #:** _____

Main Subject of Call: Public Meeting for Division Avenue Environmental Assessment

Items Discussed:

I spoke with Blane Kemp at 5995 S. Division Wyoming, MI. He represents BMW and was interested in the BRT Silver Line and the impact of this project on his facility. I explained the BRT is a complimentary project with proposed stations within our segment starting this spring but that this EA was for the proposed road improvements along the corridor. I sent per his request a email info packet on the meeting since he could not make it and was just getting back to my notice.

[illegible]

APPENDIX C

MICHIGAN NATURAL FEATURES INVENTORY TABLE

Michigan Natural Features Inventory Information Request

Requestor: **Stephanie Kozlowicz - URS**

Project: **Division Avenue**

Location: **6N 12W Sec. 36 and 6N 11W Sec. 31**

Request submission date: **June 05, 2014**

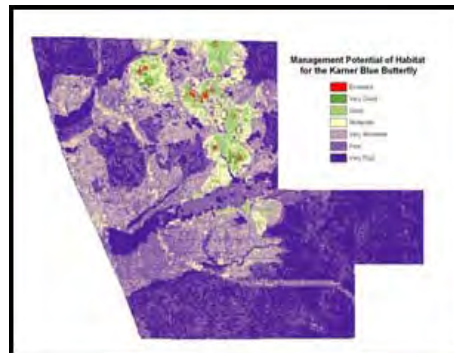
Print Date: **June 12, 2014**

Detailed information on the species listed in this report can be found in abstracts and the rare species explorer on the Michigan Natural Features Inventory (MNFI) website. The MNFI website can be found at: <http://www.msue.msu.edu/mnfi>

The species in this report are listed alphabetically by scientific name. Each record from the database is listed individually. Therefore you may see multiple listings for the same species. The locational and survey date information may be the only differentiating factors when looking at multiple occurrences for a given species. Heritage methodology is followed when entering species occurrences into the MNFI database. Detailed information on heritage methodology can be obtained on NatureServe's website at the link listed below.

<http://www.natureserve.org/prodServices/heritagemethodology.jsp>

By acceptance of the information services made available through MNFI the recipient understands that access to the information is provided for primary use only. MNFI requests that the user respect the confidential and sensitive nature of the information. There should be no redistribution of the information. Indiscriminate distribution of information regarding locations of many rare species represents a threat to their protection. Additionally, since the information is constantly being updated MNFI requests that any information service provided by MNFI is destroyed upon completion of the primary use. This information should be considered valid for one year only.



Acris crepitans blanchardi

Blanchard's cricket frog

Vertebrate Animal

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK: G5T5	STATE RANK: S2S3	LAST OBSERVED DATE: 1938-07-09
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

<u>TOWN RANGE</u>	<u>SECTIONS</u>
T06NR12W	2, 3, 10, 11

Adlumia fungosa

Climbing fumitory

Vascular Plant

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK: G4	STATE RANK: S3	LAST OBSERVED DATE: 1889-07-19
------------------------	-------------------------	------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville

COUNTY: Allegan, Kent

WATERSHED: Lower Grand, Kalamazoo

<u>TOWN RANGE</u>	<u>SECTIONS</u>
T04NR12W	3, 4
T05NR12W	21, 22, 26, 27, 28, 29, 32, 33, 34, 35

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Arabis missouriensis var. deamii

Missouri rock-cress

Vascular Plant

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK: G5?QT3?Q	STATE RANK: S2	LAST OBSERVED DATE: 1893-06-18
------------------------	-------------------------	------------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208575/Caledonia, 4208576/Cutlerville, 4208585/Grand Rapids East, 4308516/Cedar Springs SW, 4308515/Rockford, 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand, Thornapple

TOWN RANGE SECTIONS

T06NR10W 5, 6, 7, 8, 18, 19

T06NR11W 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

T06NR12W 1, 2, 3, 10, 11, 12, 13, 14, 15, 22, 23, 24, 25, 26, 36

T07NR10W 19, 30, 31, 32

T07NR11W 7, 8, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

T07NR12W 13, 23, 24, 25, 26, 27, 34, 35, 36

Arabis perstellata

Rock cress

Vascular Plant

FEDERAL STATUS: PS	STATE STATUS: T	GLOBAL RANK: G5	STATE RANK: S1	LAST OBSERVED DATE: 1900
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208587/Grandville, 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 2, 3, 4, 5, 8, 9, 10, 11

T07NR12W 32, 33, 34, 35

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Carex davisii

Davis's sedge

Vascular Plant

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G4	STATE RANK: S3	LAST OBSERVED DATE: 1948
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS
T06NR12W 3, 4, 5, 9, 10

Celtis tenuifolia

Dwarf hackberry

Vascular Plant

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5	STATE RANK: S3	LAST OBSERVED DATE: 1978-SU
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS
T06NR11W 8

Diarrhena obovata

Beak grass

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK:G4G5	STATE RANK: S2	LAST OBSERVED DATE: 1999
-----------------	-----------------	------------------	----------------	--------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS
T06NR11W 17

Eleocharis melanocarpa

Black-fruited spike-rush

Vascular Plant

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK: G4	STATE RANK: S3	LAST OBSERVED DATE: 1942-06-23
------------------------	-------------------------	------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

<u>TOWN RANGE</u>	<u>SECTIONS</u>
T06NR12W	11

Euphorbia commutata

Tinted spurge

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK: G5	STATE RANK: S1	LAST OBSERVED DATE: 1896-05-10
------------------------	------------------------	------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

<u>TOWN RANGE</u>	<u>SECTIONS</u>
T06NR11W	7, 17

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Galearis spectabilis

Showy orchis

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK: G5	STATE RANK: S2	LAST OBSERVED DATE: 1893-05-15
------------------------	------------------------	------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208575/Caledonia, 4208576/Cutlerville, 4208585/Grand Rapids East, 4308516/Cedar Springs SW, 4308515/Rockford, 4208586/Grand Rapids West

WATERSHED: Thornapple, Lower Grand

TOWN RANGE SECTIONS

T06NR10W	5, 6, 7, 8, 18
T06NR11W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 29, 30
T06NR12W	1, 2, 3, 10, 11, 12, 13, 14, 15, 23, 24, 25
T07NR10W	18, 19, 29, 30, 31, 32
T07NR11W	3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T07NR12W	12, 13, 14, 22, 23, 24, 25, 26, 27, 34, 35, 36

Galearis spectabilis

Showy orchis

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK: G5	STATE RANK: S2	LAST OBSERVED DATE: 1894-05-19
------------------------	------------------------	------------------------	-----------------------	---------------------------------------

USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville, 4208577/Hudsonville East, 4208586/Grand Rapids West, 4208587/Grandville

COUNTY: Kent, Ottawa

WATERSHED: Lower Grand, Kalamazoo

TOWN RANGE SECTIONS

T05NR11W	5, 6, 7, 8, 18
T05NR12W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
T05NR13W	1, 2, 3, 11, 12, 13
T06NR11W	6, 7, 8, 17, 18, 19, 20, 29, 30, 31, 32
T06NR12W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T06NR13W	1, 11, 12, 13, 14, 22, 23, 24, 25, 26, 27, 34, 35, 36
T07NR12W	32, 33, 34, 35

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Hydrastis canadensis

Goldenseal

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK:G4	STATE RANK: S2	LAST OBSERVED DATE: 1979-05
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville, 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 26

Mertensia virginica

Virginia bluebells

Vascular Plant

FEDERAL STATUS:	STATE STATUS: E	GLOBAL RANK:G5	STATE RANK: S1S2	LAST OBSERVED DATE: 2006-05-07
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR11W 17

Mertensia virginica

Virginia bluebells

Vascular Plant

FEDERAL STATUS:	STATE STATUS: E	GLOBAL RANK:G5	STATE RANK: S1S2	LAST OBSERVED DATE: 2003-05-08
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West, 4208587/Grandville

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 4, 5, 8, 9

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Mesomphix cupreus

Copper button

Invertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5	STATE RANK: SU	LAST OBSERVED DATE:
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville, 4208575/Caledonia

COUNTY: Allegan, Barry, Kent

WATERSHED: Thornapple, Lower Grand, Kalamazoo

TOWN RANGE SECTIONS

T04NR10W	6
T04NR11W	1, 2, 3, 4, 5, 6
T05NR10W	6, 7, 18, 19, 30, 31
T05NR11W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T06NR10W	31
T06NR11W	31, 32, 33, 34, 35, 36

Morus rubra

Red mulberry

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK:G5	STATE RANK: S2	LAST OBSERVED DATE: 1901-06-29
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208585/Grand Rapids East, 4208575/Caledonia, 4208574/Alto, 4208584/Cascade

COUNTY: Kent

WATERSHED: Thornapple, Lower Grand

TOWN RANGE SECTIONS

T05NR09W	6
T05NR10W	1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12
T05NR11W	1
T06NR09W	5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 21, 29, 30, 31, 32
T06NR10W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T06NR11W	1, 2, 11, 12, 13, 14, 23, 24, 25, 26, 35, 36
T07NR09W	30, 31, 32
T07NR10W	19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T07NR11W	25, 35, 36

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Notropis dorsalis

Bigmouth shiner

Vertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5	STATE RANK: S4	LAST OBSERVED DATE: 1997-08-06
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West, 4208576/Cutlerville

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 25, 26, 36

Panax quinquefolius

Ginseng

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK:G3G4	STATE RANK: S2S3	LAST OBSERVED DATE: 1896-09-01
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208575/Caledonia, 4208584/Cascade, 4208585/Grand Rapids East, 4208574/Alto

COUNTY: Kent

WATERSHED: Lower Grand, Thornapple

TOWN RANGE SECTIONS

T05NR09W	6
T05NR10W	1, 2, 3, 4, 5, 6, 8, 9, 10, 11
T05NR11W	1
T06NR09W	5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31, 32
T06NR10W	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T06NR11W	1, 2, 11, 12, 13, 14, 23, 24, 25, 26, 35, 36
T07NR09W	30, 31, 32
T07NR10W	19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36
T07NR11W	25, 35, 36

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Platanthera ciliaris

Orange- or yellow-fringed orchid

Vascular Plant

FEDERAL STATUS:	STATE STATUS: E	GLOBAL RANK:G5	STATE RANK: S1S2	LAST OBSERVED DATE: 1885
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 11, 12

Terrapene carolina carolina

Eastern box turtle

Vertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5T5	STATE RANK: S2S3	LAST OBSERVED DATE: 2006-04-21
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208575/Caledonia, 4208576/Cutlerville, 4208586/Grand Rapids West, 4208585/Grand Rapids East

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR11W 19, 20, 21, 22, 27, 28, 29, 30, 32, 33, 34

Terrapene carolina carolina

Eastern box turtle

Vertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5T5	STATE RANK: S2S3	LAST OBSERVED DATE: 1989-08
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T05NR12W 2, 11

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Terrapene carolina carolina

Eastern box turtle

Vertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK:G5T5	STATE RANK: S2S3	LAST OBSERVED DATE: 2012-09-08
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208576/Cutlerville, 4208577/Hudsonville East, 4208587/Grandville, 4208586/Grand Rapids West

COUNTY: Kent, Ottawa

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T05NR12W 4, 5, 6

T05NR13W 1

T06NR11W 6, 7, 18

T06NR12W 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

T06NR13W 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 21, 22, 23, 24, 25, 26, 27, 28, 34, 35, 36

T07NR11W 31

T07NR12W 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

T07NR13W 13, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, 36

Valerianella chenopodiifolia

Goosefoot corn salad

Vascular Plant

FEDERAL STATUS:	STATE STATUS: T	GLOBAL RANK:G5	STATE RANK: S1	LAST OBSERVED DATE: 1897-06-01
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4208586/Grand Rapids West

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR12W 12

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Valvata perdepessa

Purplecap valvata

Invertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK: G3	STATE RANK: SNR	LAST OBSERVED DATE: 1914-09-26
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4308515/Rockford, 4308517/Marne, 4208587/Grandville, 4208586/Grand Rapids West, 4208585/Grand Rapids East, 4308516/Cedar Springs SW

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR11W 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20

T06NR12W 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24

T07NR11W 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

T07NR12W 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

T08NR11W 31, 32, 33

T08NR12W 34, 35, 36

Ventridens intertextus

Pyramid dome

Invertebrate Animal

FEDERAL STATUS:	STATE STATUS: SC	GLOBAL RANK: G5	STATE RANK: SNR	LAST OBSERVED DATE: 1948-09-13
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USGS TOPOQUAD MAPSHEET CODE/NAME: 4308515/Rockford, 4308517/Marne, 4208587/Grandville, 4208586/Grand Rapids West, 4208585/Grand Rapids East, 4308516/Cedar Springs SW

COUNTY: Kent

WATERSHED: Lower Grand

TOWN RANGE SECTIONS

T06NR11W 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20

T06NR12W 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24

T07NR11W 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35

T07NR12W 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

T08NR11W 31, 32, 33

T08NR12W 34, 35, 36

Michigan Natural Features Inventory Information Request

Print Date: June 12, 2014
Information valid for one year.

Enclosed is the data requested from Michigan Natural Features Inventory (MNFI). This information is a list of Element Occurrences (EO) at the section level. In some cases, the extent of an animal's range or a community type may extend past the sections listed.

The MNFI database is an ongoing and continuously updated information base. The database is the only comprehensive single source of existing information on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. This database cannot provide a definitive statement on the presence, absence, or condition of the natural features in any given locality, since most sites have not been specifically or thoroughly surveyed for their occurrence. Furthermore, plant and animal populations and natural communities change with time. Therefore, the information services provided should not be regarded as a complete statement on the occurrence of special natural features of the area in question. In many cases the information may require the interpretation of a trained scientist.

The recipient(s) of the information understand that state endangered and threatened species are protected under state law (Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection). Any questions, observations, new findings, violations or clearance of project activities should be conducted with the Michigan Department of Natural Resources, Wildlife Division. Contact Lori Sargent or Todd Hogrefe at (517) 373-1263. The recipient(s) of the information understand that federally endangered and threatened species are protected under federal law (Endangered Species Act of 1973). Any questions, observations, new findings, violations or clearance of project activities should be conducted with the U.S. Fish and Wildlife Service in East Lansing. Their phone number is (517) 351-2555. Recipients of the information are responsible for ensuring the protection of protected species and obtaining proper clearance before project activities begin.

By acceptance of the information services made available through MNFI the recipient understands that access to the information is provided for primary use only. MNFI requests that the user respect the confidential and sensitive nature of the information. There should be no redistribution of the information. Indiscriminate distribution of information regarding locations of many rare species represents a threat to their protection. Additionally, since the information is constantly being updated MNFI requests that any information service provided by MNFI is destroyed upon completion of the primary use. This information should be considered valid for one year only.

This information is used to guide conservation and land management activities. Some of the element records are historical. While this information may not be important for regulatory purposes, it is important for management and restoration purposes and for scientific use.

State Protection Status Code Definitions

E = Endangered
T = Threatened
SC = Special concern
X = Presumed extirpated (legally 'threatened' if rediscovered)

Federal Protection Status Code Definitions

LE = Listed endangered
LT = Listed threatened
LELT = Partly listed endangered and partly listed threatened
PDL = Proposed delist
E(S/A) = Endangered based on similarities/appearance
PS = Partial status (federally listed in only part of its range)
C = Species being considered for federal status

Global Heritage Status Rank Definitions

The priority assigned by [NatureServe <http://www.natureserve.org>](http://www.natureserve.org)'s national office for data collection and protection based upon the element's status throughout its entire world-wide range. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences range-wide or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 = Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 = Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g. a single western state, a physiographic region in the East) or because of other factor(s) making it vulnerable to extinction throughout its range; in terms of occurrences, in the range of 21 to 100.

G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.

G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.

GH = Of historical occurrence throughout its range, i.e. formerly part of the established biota, with the expectation that it may be rediscovered (e.g. Bachman's Warbler).

GU = Possibly in peril range-wide, but status uncertain; need more information.

GX = Believed to be extinct throughout its range (e.g. Passenger Pigeon with virtually no likelihood that it will be rediscovered).

G? = Incomplete data

Q = Taxonomy uncertain

T = Subspecies

U = Unmappable through out the global geographic extent

? = Questionable

Subnational Heritage Status Rank Definitions

The priority assigned by the Michigan Natural Features Inventory for data collection and protection based upon the element's status within the state. Criteria not based only on number of occurrences; other critical factors also apply. Note that ranks are frequently combined.

S1 = Critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.

S2 = Imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.

S3 = Rare or uncommon in state (on the order of 21 to 100 occurrences).

S4 = Apparently secure in state, with many occurrences.

S5 = Demonstrably secure in state and essentially ineradicable under present conditions.

SA = Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range.

SE = An exotic established in the state; may be native elsewhere in North America (e.g. house finch or catalpa in eastern states).

SH = Of historical occurrence in state and suspected to be still extant.

SN = Regularly occurring, usually migratory and typically nonbreeding species.

SR = Reported from state, but without persuasive documentation which would provide a basis for either accepting or rejecting the report.

SRF = Reported falsely (in error) from state but this error persisting in the literature.

SU = Possibly in peril in state, but status uncertain; need more information.

SX = Apparently extirpated from state.